THE ARCHITECT & BUILDING NEWS

31 MARCH 1955 · VOL. 207 · NO. 13 · ONE SHILLING WEEKLY

- **WHITMORE COUNTY PRIMARY SCHOOL, BASILDON**
- **WESTBAHNHOF STATION, VIENNA**

PUBLISHED IN LONDON SINCE 1854

WHERE SIMPLE OR COMPLICATED SCHEMES OF VENTILATION ARE INSTALLED, AND THE OPERATION IS REQUIRED BY REMOTE CONTROL OR OTHERWISE, AND THE WINDOWS HAVE ANY OF THE FOLLOWING CHARACTERISTICS:—

- OPENING OUTWARDS
- OPENING INWARDS
- TOP HUNG
- HORIZONTAL CENTRE HUNG
- BOTTOM HUNG
- VERTICAL PIVOT HUNG
- SIDE HUNG
- HORIZONTAL SLIDING
- VERTICAL SLIDING

The illustration shows One set of Electrically operated Twin Tension Rod Gear with Counter-Balance Unit operating one continuous opening light, 74' 0" long x 5' 0" deep. Note the Spiral Balance Wheel fitted at the end Sprocket.

Always Specify WINDOW OPENING GEAR *for*

SKYLIGHTS, LANTERN LIGHTS, CLERESTORY LIGHTS, FANLIGHTS, SIDE WALL LIGHTS IN WOOD OR METAL WINDOWS, OR IN PATENT GLAZING, ROOF LIGHTS AND BENCH LIGHTS IN GREENHOUSES, DAMPERS, TRAP DOORS, SHIPS SKYLIGHTS, ETC.

HAND - OPERATED — ELECTRIC — HYDRAULIC — REMOTE CONTROL

by WILLIAM NEWMAN & SONS LTD.

HOSPITAL STREET, BIRMINGHAM

GEARING DEPT. BRANCH WORKS 3, WELLHEAD LANE, PERRY BARR, BIRMINGHAM

Is this advertisement really necessary ?

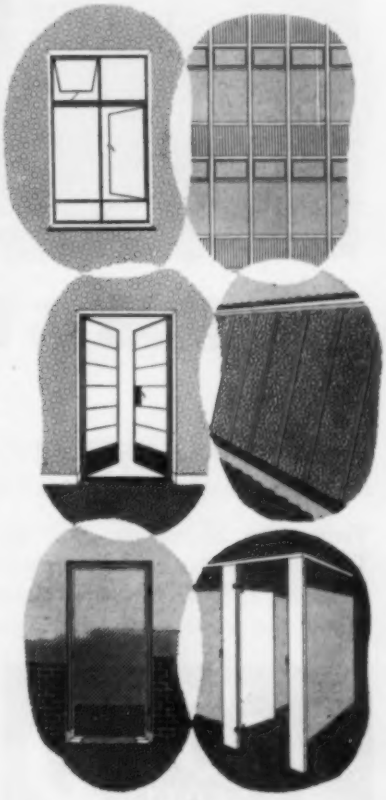
Syd Blantern* will coolly face a berserk Architect. When playing cricket he prefers the nerve-shattering position of opening bat. When he can relax he does so with a good blood and thunder Peter Cheyney novel. But when it comes to facing a camera, Syd Blantern, our South Yorkshire Area Manager, just can't take it. Let his record serve as an introduction. Twenty years with Williams & Williams, seven years as Area Manager, a team of representatives, estimators, draughtsmen and window fixers, imbued with his own Yorkshire philosophy, "People expect service. Give 'em the best." Enough's as good as a feast, he says, shuddering at the thought of being photographed.

* **MR. C. S. BLANTERN, WILLIAMS & WILLIAMS LIMITED**
65 Wolstenholme Road, Sharrow, Sheffield, 7. Sheffield 51594.

Other offices at: *Belfast* (23762) . *Birmingham* (*Shirley* 3064) *Bristol* (38907) . *Bromley* (*Ravensbourne* 6274) . *Cardiff* (27092) *Crawley* (2200) . *Glasgow* (*Douglas* 0003) . *Hertford* (3969). *Leeds* (21208) . *Liverpool* (*Central* 0325) . *London* (*Sloane* 0323) *Maidstone* (51750) . *Manchester* (*Blackfriars* 9591) *Newcastle-upon-Tyne* (21353) . *Nottingham* (52131) . *Reading* (50291) *Southampton* (26252)

METAL WINDOWS **WILLIAMS & WILLIAMS**

Member of the Metal Window Association



Metal Windows **Wallspan Curtain Walling**
Metal Doors **Aluminox**
Metal Door Frames **Roften Toilet Cubicles**

LANDMARKS IN STEEL

Architect: E. Vincent Harris, O.B.E., F.R.I.B.A., 19 West Eaton Place, Eaton Square, London, S.W.1

STEELWORK for LOCAL GOVERNMENT

TOWN HALL EXTENSION
MANCHESTER

Visitors to Manchester will all recognise the Town Hall Extension. Architects and Builders alike will all realize the craftsmanship which lies behind the words—Steelwork by—

EDWARD WOOD & CO LTD

A view of the skeleton framework during construction.

Registered Office & Works: MANCHESTER 17
Telephone: TRAFFORD PARK 2341 (10 lines)

London Office: 68 Victoria Street, S.W.1. Telephone: VICtoria 1331/3. Technical Offices: Birmingham and Loughborough

dm WD 50

THE H.W. RANGE of switch fuses is designed for use out-of-doors in dust-laden and corrosive atmospheres. The totally enclosed heavy cast iron cases are completely weatherproof.

The range includes single pole and neutral, double pole, triple pole, triple pole and neutral. 20, 30, 60 and 100 amps.

For further information about the H.W. Range please send for Switchgear Bulletin X2692.

G.E.C. THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2.

You get 34.4% more light

With Venetian Blinds of *Luxaflex*

Bare window wastes light.... leaves far side dark

LUXAFLEX blind spreads light to far side of room

An exhaustive study by the Faber Birren Company* shows: A bare window gives extreme glare on one side of the room, insufficient light on the other. The Luxaflex Blind, by reflection, *spreads* the high-intensity sunlight at the window throughout the room - giving more illumination with less glare. The brightness ratio, which was 14 to 1 with the bare window, is now reduced to a comfortable 4 to 1.

Only LUXAFLEX blind-materials give these maintenance and durability advantages:

Easy cleaning
A damp cloth wipes away even the most stubborn stains from LUXAFLEX aluminium slats and vinyl plastic tapes. The tapes always keep their freshness - never stretch, shrink or discolour.

Snap-back aluminium slats
Now available in 14 beautiful pastel colours. Duratized to snap back ruler-straight, even when bent to a 90° angle. Baked-on finish can't rust, chip, crack or discolour.

Look for this mark
Be sure the blinds you specify carry the Luxaflex „visible-invisible" trade-mark on the slats. It's your guarantee of unrivalled quality.

Write for additional information and the name and address of a venetian blind manufacturer using Luxaflex slats and tapes to

HUNTER DOUGLAS (GREAT BRITAIN) LTD., 10 DRAKE STREET, RED LION SQUARE, LONDON W.C. 1

Tel.: HOLborn 1271/2

* This study was made at the request of Hunter Douglas Corporation, New York, U.S.A. Copies available on request.

600 up...

600 down

every hour

in a PATERNOSTER *Lift*

In offices and factory administration buildings, wherever heavy inter-floor traffic is customary, Paternoster lifts are ideal. Consisting of a series of cabs carried on endless chains and travelling continuously in a clockwise direction, a Paternoster provides quick, easy transport for 600 ascending and 600 descending passengers each hour.

Paternoster lifts offer other advantages in addition to high transportation performance. Continuous automatic operation reduces waiting periods to the minimum, permits simultaneous travel in both directions at all times, dispenses with the services of lift operators and lowers electricity charges by eliminating the constant starting of motors. Because of the Paternoster's simple operating machinery, maintenance costs are negligible.

Why not write for illustrated leaflet 1005 which gives full particulars?

J. & E. HALL
LIMITED
DARTFORD, KENT

Telephone. Dartford 3456

London Office: 10 ST. SWITHIN'S LANE, LONDON, E.C.4. TEL: MANSION HOUSE 9811

B

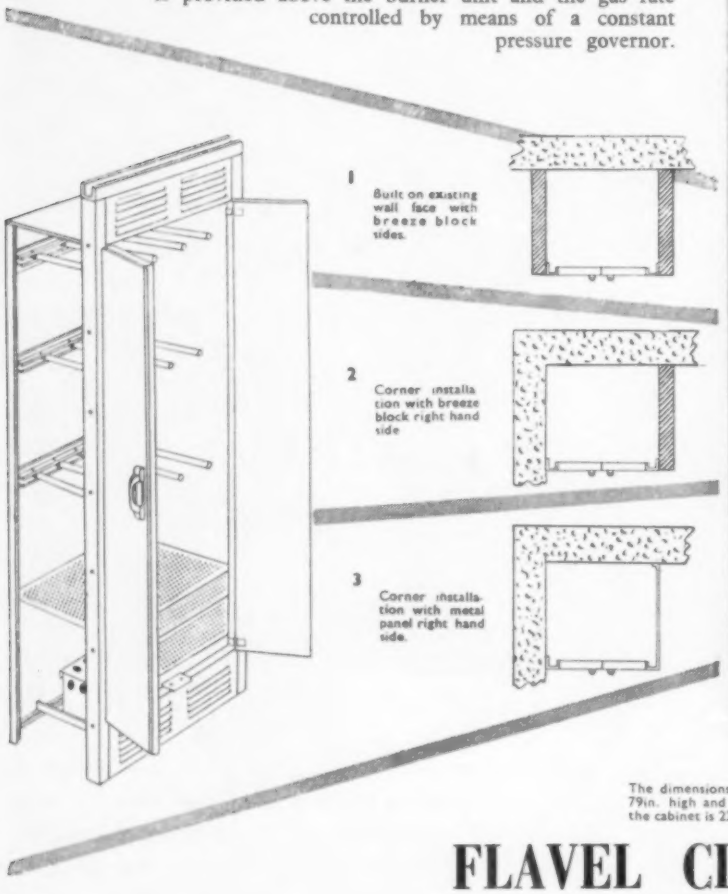
Built-in..

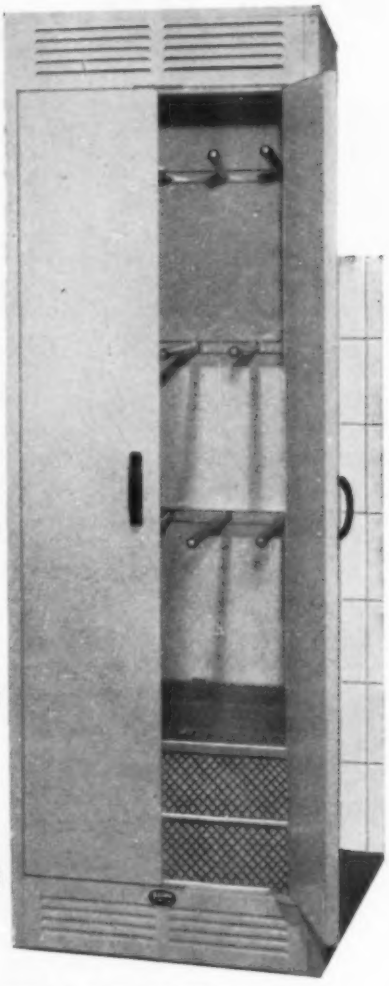
or free standing

The Flavel Clothes Dryer is constructed in order that this may be supplied as a complete unit, or alternatively for building into a recess or corner, by utilizing the main frame assembly and component parts.

The cabinet is strongly constructed of Zintec sheet steel and is finished in cream stove-enamelled paint, fitted with double doors and heated by means of a gas burner unit in the base.

The dryer is large enough to contain an average weekly wash hanging on eleven tubular Bakelite rails at three different heights. A guard is provided above the burner unit and the gas rate controlled by means of a constant pressure governor.


1
Built on existing wall face with breeze block sides.
2
Corner installation with breeze block right hand side
3
Corner installation with metal panel right hand side.



The dimensions of the Free Standing model are 79in. high and 24in. deep, and the width inside the cabinet is 23¼in.

FLAVEL CLOTHES DRYER

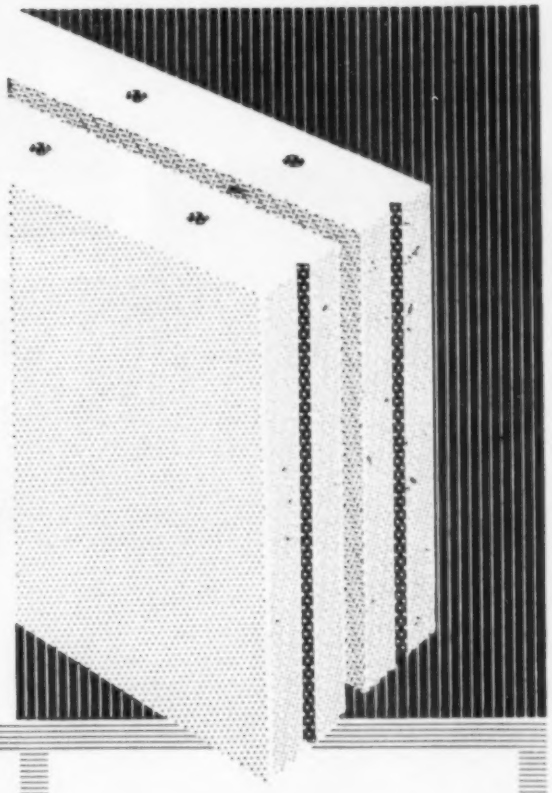
(GAS HEATED)

provides perfect drying conditions every washday!

FLAVELS *of* **LEAMINGTON** *Makers of fine cooking and heating appliances since* 1777

Telephones: LEAMINGTON 100 (Head Office) 3091/2 (Sales) Telegrams: FLAVELS.

STONE FOR STABILITY



Portland Stone

Monks Park Stone

Doulting Stone

Beer Stone

BPSF

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Head Office **BATH** *Telephone 3248-9*

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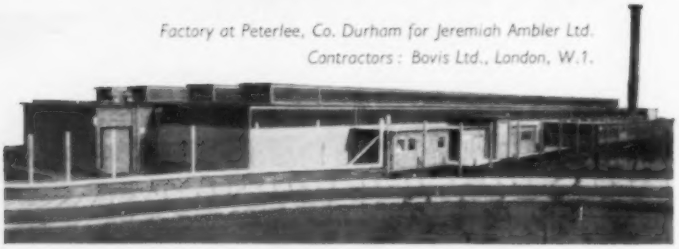
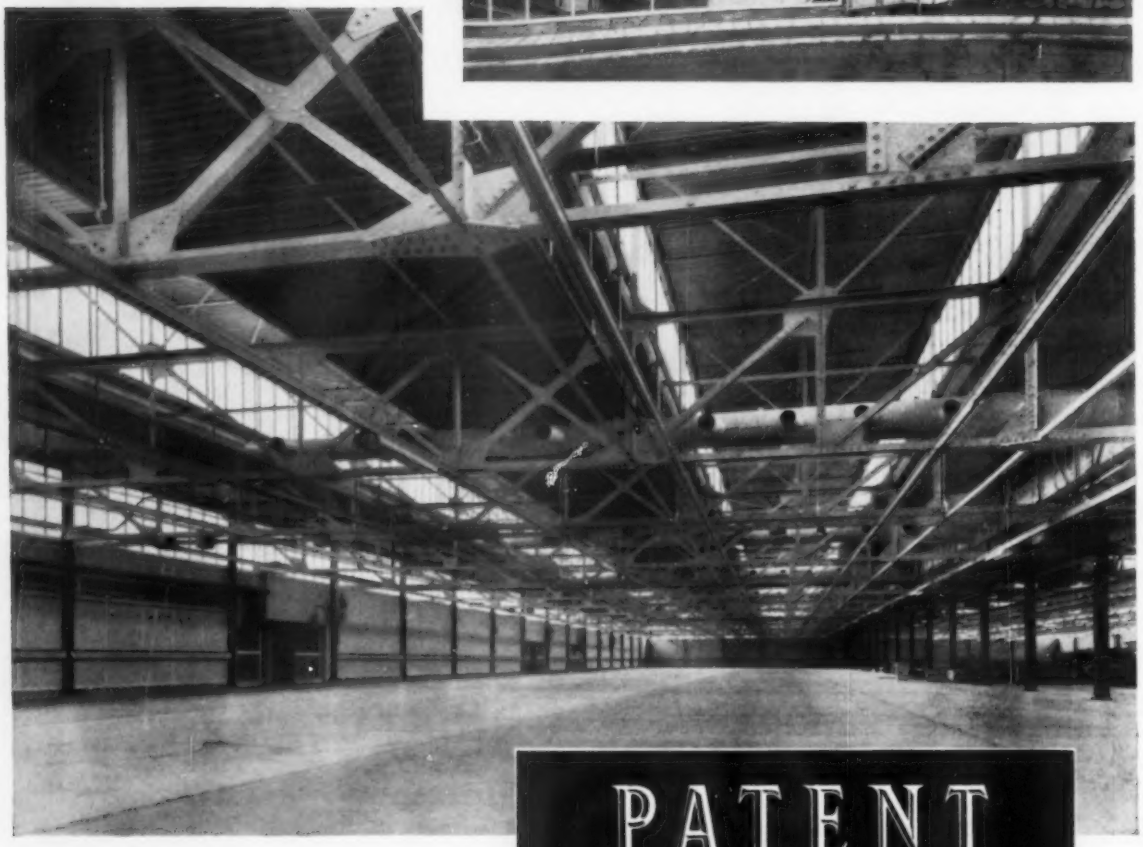
G

Factory at Peterlee, Co. Durham for Jeremiah Ambler Ltd.
Contractors: Bovis Ltd., London, W.1.





PATENT GLAZING *for light industries*

specify . . .

P G C

For maximum daylight and controlled heating, Patent Double Glazing has been installed in the above modern factory for wool spinning, which process demands a fairly high humidity, together with uniform temperature. The possibility of excessive condensation and fluctuation in temperature through heat loss is minimised by the use of Double Glazing, the insulating properties of which reduce the thermal transmittance by 50%. Fuel costs are reduced considerably, and the required process conditions, together with the improved wellbeing of operatives are thus advantageously achieved.

PATENT GLAZING BY HEYWOODS OF HUDDERSFIELD

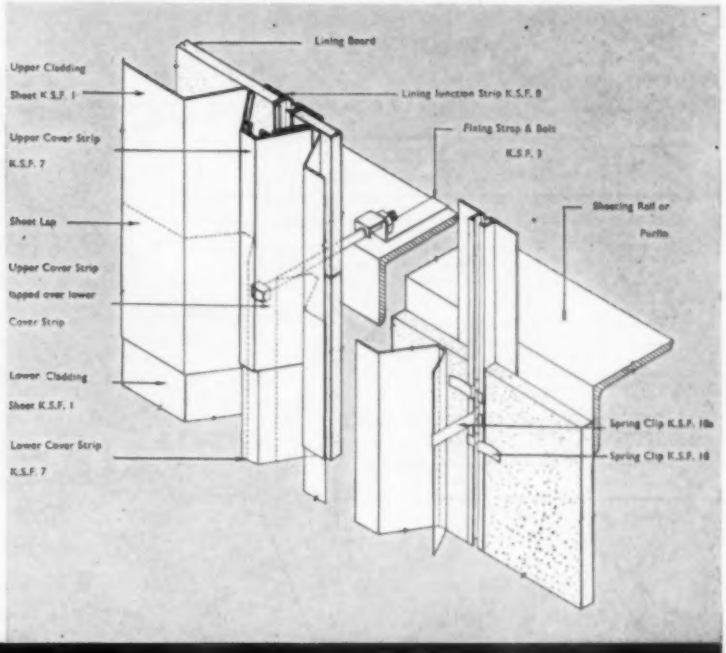
Write or 'phone for our representative to call: he will be pleased to help you. Information sheets sent on request.

W. H. HEYWOOD & CO. LTD., HUDDERSFIELD. Telephone 6594 (5 lines)

Branches at: London, Manchester, Glasgow, Belfast Newcastle, Birmingham, Liverpool, Leicester, Nottingham, Coventry, Bristol, Plymouth. Associate Company in Eire: W. H. Heywood & Co. (Ireland) Ltd., 63-64 Upper O'Connell Street, Dublin.

hey3541

A new roof and wall cladding


Lining Board
Upper Cladding Sheet K.S.F. 1
Lining Junction Strip K.S.F. 8
Upper Cover Strip K.S.F. 7
Fixing Strap & Bolt K.S.F. 3
Sheeting Rail or Purlin
Sheet Lap
Upper Cover Strip lapped over lower Cover Strip
Lower Cladding Sheet K.S.F. 1
Spring Clip K.S.F. 10b
Spring Clip K.S.F. 10
Lower Cover Strip K.S.F. 7

'KYNALOK'

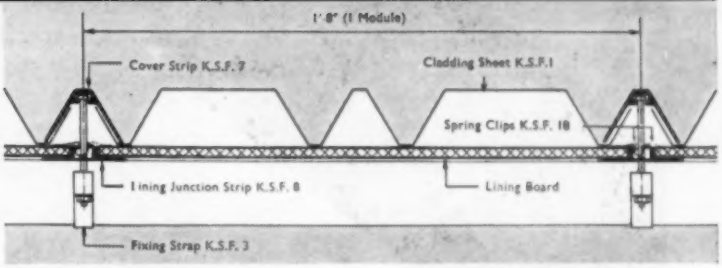
Secret-fix

The 'Kynalok' *Secret-fix* system offers a greatly improved method of roof and wall cladding, using 'Kynal' aluminium alloy profiled sheets and extrusions, with provision for insulating lining. Both cladding and insulation are erected at one and the same time, using fixings common to both.

The cladding is held in position by an extruded aluminium alloy cover strip which accepts the head of the fixing bolts on its underside; there are thus no protruding bolt heads and no drilling of the cladding is required.

Licensed under British Patent Nos. 648,527, 699,054 and 699,055 and British Patent Application No. 14281/54.

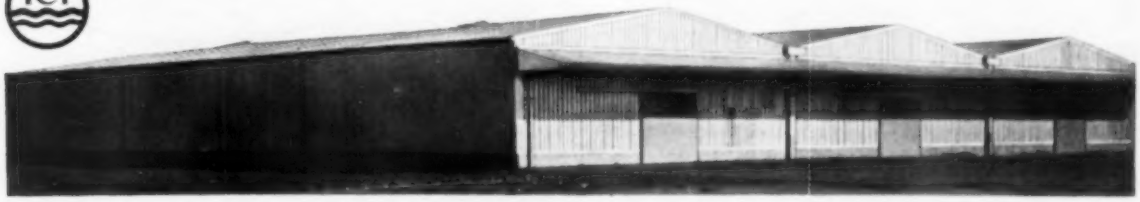
Descriptive brochure will gladly be sent on request.



SEVEN GOOD REASONS FOR USING 'KYNALOK' *Secret-fix.*

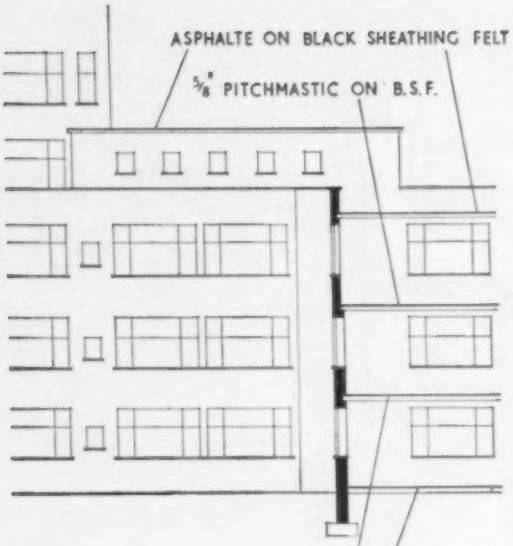
1 **Extremely strong and durable.**
2 **Neat and distinctive—all bolts concealed.**
3 **Easy to erect and demount.**
4 **Adaptable to any metal or wood frame.**
5 **High thermal insulation.**
6 **Insulation lining fixed integrally.**
7 **Light to transport.**

ICI



IMPERIAL CHEMICAL INDUSTRIES LTD., LONDON, S.W.1

M147



Specify Efficiency and Economy on your Roof and Floor Plans

In other words, specify Black Sheathing Felt. There's no other insulation quite like B.S.F. for absolute efficiency—thanks to the specially selected fibres of flax and jute perfectly fluxed with the pitch by the most modern process. There's no other insulation like B.S.F. for economy—thanks to its easy working and permanency.

For more than forty years architects and builders have specified and used B.S.F. And the B.S.F. specified forty years ago for all types of buildings is still serving as a perfect underlay for mastic asphalte roofs and floors.

BLACK SHEATHING FELT

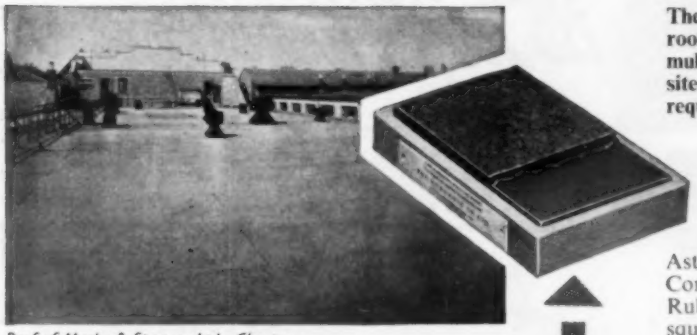
Specify and use it as the Underlay to Mastic Asphalte Roofs and Floors

Make sure the Underlay is
BLACK SHEATHING FELT
UNDER THE ASPHALTE
BLACK SHEATHING FELT
All rolls bear this sign. It is the architects' and asphalters' assurance of top quality underfelt. Accept no substitute for Black Sheathing Felt.

Manufactured by : **John Erskine Ltd., Belfast ; Robt. McCalmont & Sons Ltd., Belfast ; F. McNeill & Co. Ltd., London ; Permanite Ltd., London ; John Rogers Ltd., Belfast ; D. Anderson & Son Ltd., Manchester ; Engert & Rolfe Ltd., London**

BSF/9

Standard Specifications for
RUBEROID *Built-up* ROOFS

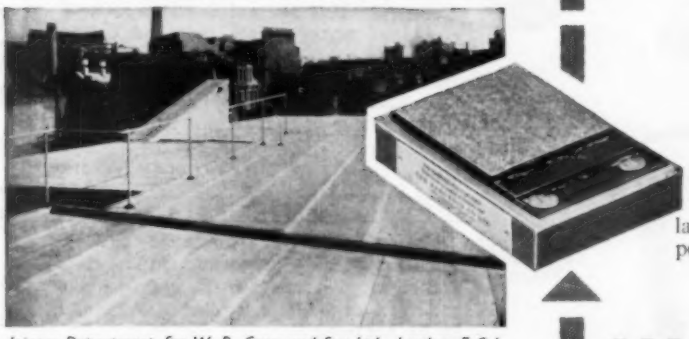


Roof of Marks & Spencer Ltd., Chester.
Architect : Norman Jones, Son & Rigby, Southport.

The Ruberoid Built-up Roof is a permanent roofing for buildings of every kind. It consists of multiple layers of Ruberoid bonded together on site with bitumen and surfaced according to the requirements of the building.

2-layers on concrete :
(Specification H.2)

Astos Asbestos Underlay bonded with Ruberoid Compound and finished with Mineral Surfaced Ruberoid Roofing. Weight 139¼ lb. per 100 square feet.



Joinery Department for W. R. Crow and Son Ltd., London, E.C.1.
Building Surveyor : C. G. Eaglen & Son.

3-layers on boards :
(Specification D.4)

Two layers of Astos Asbestos Underlay bonded with Ruberoid Compound and finished with a layer of Astos Asbestos Roofing. Weight 157¼ lb. per 100 square feet.

Municipal Offices, Bromley, Kent.
Borough Engineer : H. Cliffe, B.Sc. (Eng.).

3-layers on concrete :
(Specification J.2)

Two layers of Astos Asbestos Felt bonded with Ruberoid Compound and surfaced with Ruberoid Mineral Surfaced Roofing. Weight 189¾ lb. per 100 square feet.

RUBEROID *Built-up* ROOFS

THE RUBEROID CONTRACT DEPARTMENT UNDERTAKES WORK ON ANY SCALE IN ALL PARTS OF THE COUNTRY AT SHORT NOTICE.

Branches :
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BUILT-UP ROOF MODELS

These models clearly show the construction of Ruberoid Built-up Roofs. They are available to Architects and Builders on request, together with brochure No. 326, "Standard Specifications for Ruberoid Roofs" which gives technical details as to weights, structures required, falls, flashings and detailed drawings.

R. 151

THE RUBEROID CO. LTD., 93, COMMONWEALTH HOUSE, NEW OXFORD STREET, LONDON, W.C.1

"Murite"

the brand name that maintains its high reputation

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Grades for all purposes

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FIBRED PLASTER FOR SANDED UNDERCOATS ON WALL AND CEILING BOARDS, WOOD LATH, ETC.
1A
SPECIAL FIBRED PLASTER FOR SANDED UNDERCOATS ON METAL LATHING AND CONCRETE
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3
WALL FINISH FOR FINISHING ALL CLASSES OF SANDED UNDERCOATS
BOARD FINISH
FOR SINGLE COAT WORK ON ALL TYPES OF WALL AND CEILING BOARDS. CEMENT RENDERINGS, ETC.

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"Murite" Plasters when set revert to Gypsum. This mineral contains 20% of combined water which must be driven off before dangerous temperatures can be reached. This water barrier is one of the reasons why "Murite" Gypsum Plasters have such excellent fire-resisting properties.

WORKABILITY

"Murite" Plasters are simple to use. Scientific factory processing and a controlled set give superb working properties and allow ample time for first class results to be obtained.

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"Murite" Plasters have a greater covering capacity than other similar plasters. The undercoat grades also require less sand therefore they effect a considerable saving in use.

SPEED

"Murite" Plasters set completely within a few hours. If required, two coat work can be completed the same day and certain types of decoration can be started almost immediately without fear of failure.

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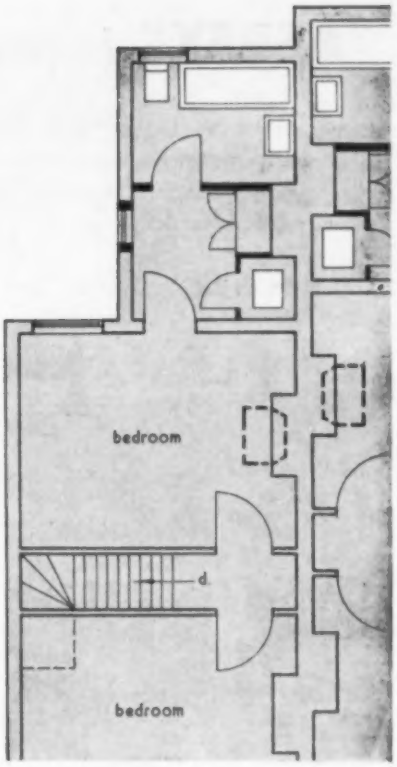
NEWARK-UPON-TRENT, NOTTS.

TELEPHONE: NEWARK 2060 TELEGRAMS: "CAFFERATA, NEWARK"

GYPSUM PLASTER & CEMENT

LEAD PIPE

because it is flexible, is a very appropriate material for pipework in the



CONVERSION OF SUB-STANDARD HOUSING

As with all conversion work, if a real job is to be made of the pipework with a minimum of structural alteration, running pipes in confined spaces will often be called for. Such work can be time-wasting and troublesome, unless it is made easier by means of flexibility in the pipe material.

Lead Pipe has the required flexibility—one of the properties of a material well proven for giving long trouble-free service.

LEAD LASTS

The Council's Technical Information Bureau will gladly help with problems on the use of Lead Sheet and Pipe in building work. Details of the main uses are given in a series of Information Sheets and Bulletins, which can be obtained by applying to the Council.

LEAD SHEET AND PIPE COUNCIL *in association with* LEAD DEVELOPMENT ASSOCIATION

EAGLE HOUSE · JERMYN STREET · LONDON S.W.1 Telegrams : Ukleadman, Piccy, London Telephone : Whitehall 4175

B111/2/60

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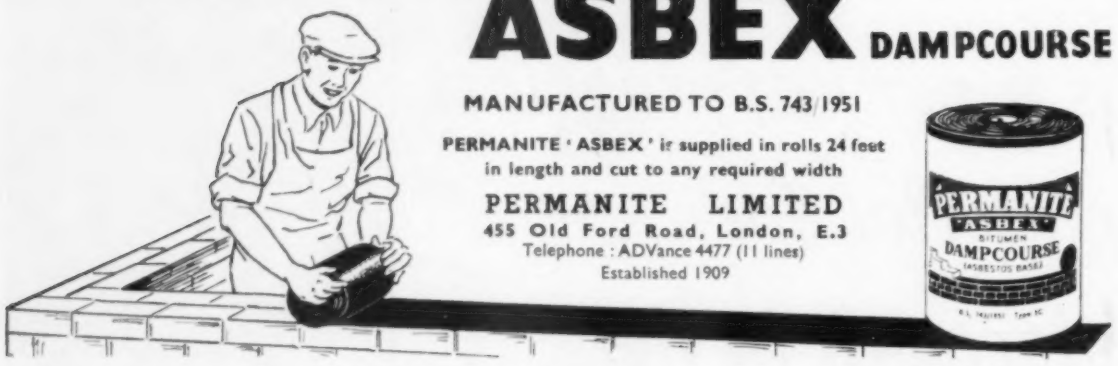
Imperishable and impenetrable, 'ASBEX' is the Dampcourse that never deteriorates—never allows moisture or vibration adversely to affect its age-old time-tested properties.

The Materials used in 'ASBEX' have proved their supreme qualities through the centuries . . . specially selected and blended asphaltic bitumens are scientifically combined with an asbestos base to form the 100% dependable Dampcourse that Architects, Government Departments and Local Authorities specify with confidence.

PERMANITE 'ASBEX' DAMPCOURSE



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PERMANITE 'ASBEX' is supplied in rolls 24 feet in length and cut to any required width

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Established 1909

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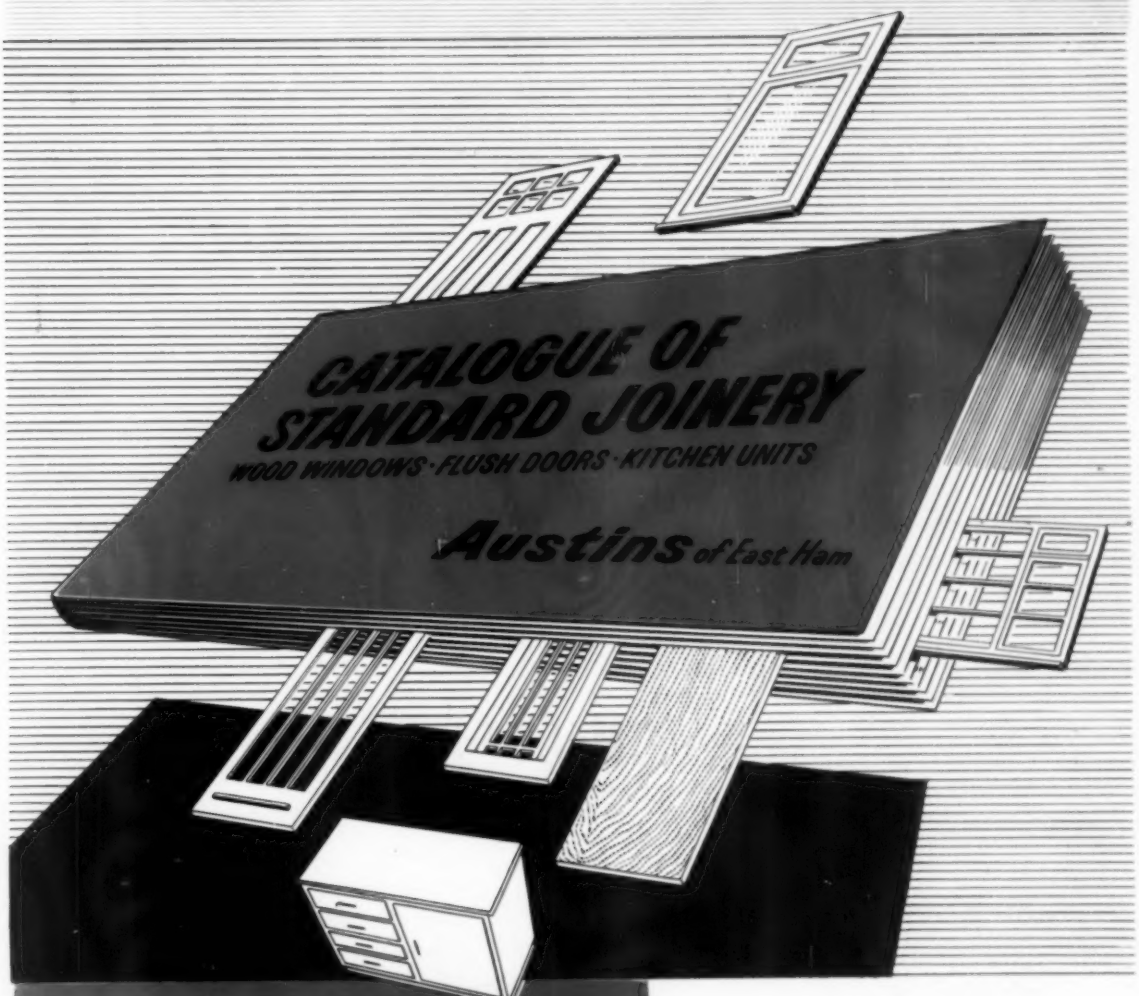
If it's Steel try CHILTON

Ask for **Austins**....



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corrugated roof lights

TO MATE WITH ANY
STANDARD CORRUGATION

PLASTICS DIVISION

FLEXO INDUSTRIES

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SOUTH CHINGFORD, LONDON, E.4
TELEPHONE: SILVERTHORN 2666 (7 LINES)

All 'Flexolite' is lightweight, resistant to weather and ordinary industrial atmospheres, and is shatterproof. It can be cut, drilled and punched by the conventional methods.

GRADE A *fire-resistant*

'Random-fibre' sheets to D.S.I.R. and L.C.C. Joint Specification (Copy of test report No. FROSI 551 available on request). Thickness, approximately $\frac{1}{16}$ in.; weight, approx. $\frac{1}{2}$ lb. per square foot. Made in profiles to match iron, aluminium and asbestos equivalents up to 43 in. nominal width, in lengths of 3 ft., then by steps of 6 in. up to 8 ft. Maximum light transmission 75%; transmits diffused natural light with glare-free illumination.

GRADE B (**NOT** fire-resistant) 'Woven' sheet, in profiles and sizes to match iron, aluminium and asbestos equivalents up to 30 in. nominal width, lengths as for Grade A. Thickness approx. $\frac{1}{16}$ in.; weight approx. 5/6 ounces per square foot. Light transmission as Grade A.

GRADE C (**NOT** fire-resistant) 'Random-fibre' sheet, profiles, size, thickness and weight as Grade A, but light transmission 85%.

important An announcement to all paint users

New colour ranges for all these paints are available and details will gladly be sent on request.

Dockers are proud to announce the introduction of

DOCKERLUX

GLOSS PAINT

which replaces those well-established and trusted brands "Hermator" and "Syntholux" since it possesses all their advantages and many others too. Dockers are confident that there is no better gloss paint in the world.

For ease of identification in future, "Muroleum" will be known as

DOCKERMATT

FLAT OIL PAINT

and "Hermasheen" will be known as

DOCKERSHEEN

EGGSHELL FINISH

These paints in conjunction with

VYDOK

EMULSION PAINTS

constitute the finest range of quality finishes.

DOCKER BROTHERS

Makers of Paints, Lacquers and Varnishes for every purpose

LADYWOOD BIRMINGHAM, 16.

London Showrooms, 17, Berners Street, London, W. 1.

D/2/55

Operation Rescue

and ASCOT

Since one of the important objectives of Operation Rescue is the provision of a hot water supply, the merits of the Ascot system will come under review when plans for improvement or conversion are considered.

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Ascot heaters are, for the service they give, inexpensive to buy. Often they are cheaper to install than some other popular systems because the pipe runs are simple.

They do not burn raw coal, which is in the interests of the householder, his neighbours, and the whole nation.

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Finally, and really most important, they give the householder a first-class hot water service from which he and his family can get piping hot water instantly day or night in an endless flow. Only of an instantaneous gas water heater can it be said that

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WHG.A.101

Vol. 207 No. 13

THE ARCHITECT & BUILDING NEWS

31 March 1955

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WHAT GOES TO MAKE AN ARCHITECT?

ARE we getting the right type of students into the profession? We are tempted to ask this question after studying the recently published results of the R.I.B.A. external examinations. It must be obvious to anyone that the numbers of failures are too high. The standard submitted must be far below what the examiners consider is expected from persons hoping to become members of the Royal Institute. Would it have been wiser for many of these potential architects, for their own benefit and that of the profession, if they had considered whether or not their calling was really architecture?

We are well aware that before you can become a Probationer of the R.I.B.A. you must have obtained the General Certificate of Education. One of the main purposes of the General Certificate of Education is to serve the needs of candidates who desire to secure, by this means, exemption from examinations giving entry to professional studies. The R.I.B.A. has no other entrance examination and the only requirement the applicant has to produce is this Certificate. We are also very well aware that you must have some standard by which to judge would-be architects, but is the present standard of education laid down by this examination producing satisfactory students?

What qualities should one look for in those who would make architecture their career? Perhaps it would be more appropriate if we asked what qualities are desirable to aim for in the architect. It is only by considering the final product that we may trace our steps back to the clay from which this product was moulded.

In this respect we do not feel we can do better than turn for guidance to the introduction of the Report of the Special Committee on Architectural Education set up by the R.I.B.A. Board of Architectural Education in 1939.

" Temperamentally," the report states, " an architect should be both imaginative and practical. His tastes should be catholic, his mind flexible, his judgment well balanced, his interests in life manifold and various. To inspire confidence in himself he must be able to take his place easily and naturally in any society, no matter of which section of the community it may be composed; and he will do so the more easily if he be widely read and well travelled, versed not only in the language and literature of his own country but in those of others. All this, then, presupposes a sound general education as a groundwork on which to build his subsequent architectural training.

" The architect should in his own person embody the attributes of three different beings, the man of the world, the man of culture and the artist."

Assuming that culture includes Science, very few will, we feel, quarrel with these definitions.

What we would like to ask is: how many of the present-day entrants into the profession have these qualities? Is the present system of general education the best method of judging whether or not a boy will make a good architect?

We were interested to read the Director of the Birmingham School of Architecture, Mr. Douglas Jones', definition of the qualities required for a would-be architect: " A real architect," he stated, " should bring to bear on his work, as a draughtsman, designer of buildings and town planner, the qualities of a philosopher, organizer, co-ordinator, pioneer and critic and in these days of plutocratic control he will also need the virtues and the patience of a saint." Dare we add to this formidable list by suggesting he should be a man of character?

How is character to be judged? At the moment it depends on whether or not he has been successful in certain academic subjects laid down by the Board of Education. Do these examinations produce the best leaders? We have our doubts. It is obvious that there must be some academic standard whereby entrants to the profession should be judged, but by the results of recent examinations we doubt whether this is the right standard. We are tempted to ask if the standard of education has fallen, or are we asking too much from the present-day youth and forgetting that our own standard was not beyond reproach?

EVENTS AND COMMENTS

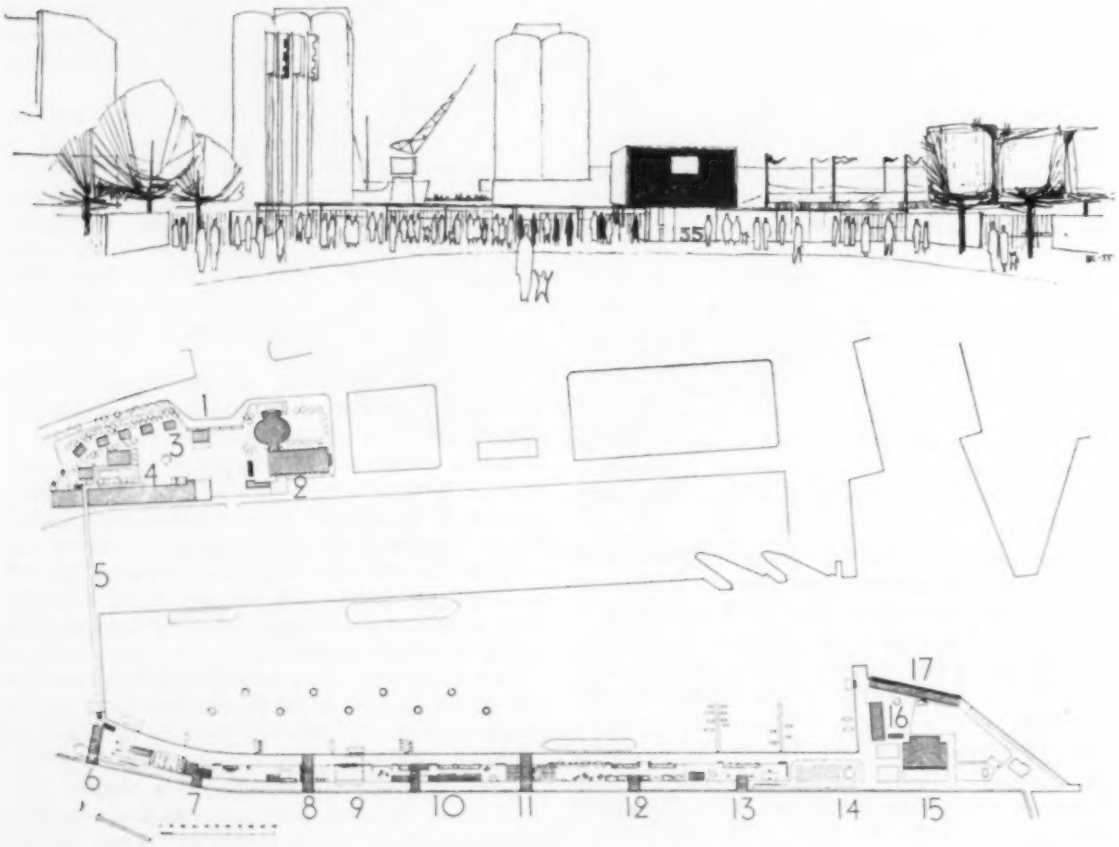
H55—HÄLSINGBORG PROGRESS

One of the new ideas to be tried out at the Hälsingborg exhibition is to start visitors off by showing them a film explaining the theme of the exhibition. The cinema will be built just inside the main gates. It will be interesting to see whether this works. At the South Bank Exhibition the guide, if I remember correctly, gave two alternative routes for visitors; one was based on the theme of the exhibition and showed the progress of man in these islands. I do not know whether more than a handful of people followed the route. The rigid control of crowds, without barriers, in an exciting exhibition needs not only careful planning and signposting but the co-operation of the public. The Hälsingborg Exhibition is essentially long and thin in plan. Circulation should not present any serious problem. The names of some of the Swedish architects engaged on the exhibition have now been published. Arne Ljung, Municipal Architect of Hälsingborg, is in overall charge of construction. Sven Silow and Torbjörn Olsson are responsible for the Housing section, Carl-Axel Acking for the exhibition halls on the pier, Erik Ahnborg for the children's section, and Bengt Gate for the Industrial Design section. This last section, to be built at the head of the pier, will include a permanent restaurant to seat 400. It is to be furnished jointly by the Nordiska Kompaniet of Stockholm and the Sven Staaf store of Hälsingborg. Every detail, down to salt spoons, will be officially approved by the exhibition management.

HURRAH! FOR BRIGHTON

The scheme for a Conference Hall at Brighton overshadowing the Royal Pavilion has been turned down by the Town Council. Congratulations to those councillors who voted against it.

All the same, I hope that a Conference Hall will be built, partly because it would free the pressure on the Royal Pavilion and partly because in the hands of a really good architect such a building would make architectural history.



HÄLSINGBORG EXHIBITION: KEY

1. Main Entrance. 2. Concert Hall, available also for congresses, variety shows, etc. 3. Housing Section: Building techniques, town planning, type flats and interior decoration. 4. Flats designed by ten nations. 5. Footbridge. 6. Electric power and light. 7. "Play and Learn" school, children's outfitting, school meals. 8 and 9. "Bread and Circuses." 10. "At your service"—bank, post office, phone: travel bureau, gift shop. 11. "Aboard"— shipping and ships' decoration. 12. "The garden." 13. "Form and Colour." 14. Meeting centre. 15. Main restaurant. 16. Pavilions of Denmark, Finland and Norway. 17. Swedish Industrial Art Hall.

THE PAVEMENT SUPERINTENDENT

The human love of watching other people work has never, as far as I know, been tapped commercially. Indirectly, I suppose, it can be said to have assisted *Punch* and other artists to earn a living, but it has never had big finance behind it.

There is nothing so irritating for the curious as a close-boarded fence 10ft high behind which entrancing mechanical noises are being made. Noise, so disturbing to anyone working in an office, is fascinating to the idle and an unsilenced pneumatic drill never lacks an audience.

In America it was long ago realized that the public had a right to see what was going on on a building lot. Holes, at appropriate heights, are provided as a matter of course for "kibitzers" of all ages to peer through. This idea may have been tried in this country, but since people here will queue for anything, such an arrangement in, say, Oxford Street, would soon be unpopular with the police.

Apparently the English translation of "kibitzer" is "Pavement Superintendent," for Messrs. Taylor Woodrow have provided an observation post for these gentlemen (ladies are usually too busy) on the site of 20, Albert Embankment, where they are constructing a 10-storey office block to the designs of T. P. Bennett and Son.

I feel sure that there is money in this idea somewhere.

INTERNATIONAL COMPETITION EXTENSION OF TIME

On March 10 and 17 I mentioned an International Competition promoted by the Portuguese Government for a memorial to Prince Henry the Navigator. Designs then had to be in by March 31. Sending-in day has now been changed to May 31 and the regulations are stated to be in accordance with U.I.A. rules. To save you the trouble of looking up your back numbers, here are the facts.

The monument is to be built on a promontory at Sagres on the Atlantic coast. In addition to a monument, competitors must also design a layout for the Southern Zone of the promontory with provision for a lighthouse and museum. The first prize is 90,000 Escudros (at 80 Escudros to the £). Fuller information from the Secretary, U.I.A. Committee, c/o R.I.B.A., 66, Portland Place, W.1. This is a team job and each team must include an architect, a civil engineer and a sculptor.

DEAR EDWIN GUNN

A cutting from a West Country magazine tells me that my old and faithful pen friend Edwin Gunn has financed the building of a new wing to Minehead's old people's home. This wing will accommodate four arthritis sufferers in separate rooms on the ground floor with their own kitchen and bathroom. A staff bedroom will be provided on the first floor.

The wing, which has been designed by Major W. E. Marsden, L.R.I.B.A., will cost between £6,000 and £7,000. Mr. Gunn gave the money from the residue of his sister's estate, saying that he thought that the scheme would have pleased her.

Mr. Gunn was unable, through illness, to attend the foundation stone-laying ceremony. We all send our best wishes, Mr. Gunn, and hope for your early recovery.

BIRMINGHAM AND FIVE COUNTIES

Unfortunately I have not seen this exhibition myself but I give you this from one who has:—

"The Birmingham general public had an opportunity of seeing what is being done by local architects when, last week, the Birmingham and Five Counties Architectural Association put on an exhibition—designated "Contemporary Architecture"—of work completed by their members since the war.

"The exhibition was a small one, and much of the work shown has been illustrated in the Technical Press. I thought, on the whole, the quality of work was of a higher standard than that shown by some allied societies. If the exhibition fell short, it was in not showing the public the amount of work going on in the society's area. Photographs had to be exhibited for the public to understand what it was all about, and much work locally is only just ready for building. The City Architect's office alone has a programme of work in hand worth 30 million pounds. I hope the society puts on another exhibition in a year or so, when it will be interesting to mark the progress made in the meantime."

CHELSEA POTTERY EXHIBITION

Quite a number of old A.A. students have made a name for themselves in fields other than architecture, among them David Rawnsley (1925 vintage) who runs the Chelsea Pottery, which has had specimens of its work accepted by the V. & A. Museum and museums in Melbourne, New York, Rotterdam and Johannesburg. The flat decorated panels now being produced have both interior and exterior architectural possibilities, I should say. An exhibition of work and a demonstration of glazing are being held at Harrods from now until Easter. Any architects interested will be well received at the Pottery which is in Radnor Walk.

TAILPIECE

From *Evening Standard* correspondence column, March 22.

"How many people agree with me that St. Paul's is an extremely ugly and rather forbidding building?"

(Signed) A. C. Ralph, Worcester Crescent, Mill Hill.

All those in favour meet me under the centre arch, Waterloo Bridge, high tide, Monday, with demolition equipment.

ABNER

NEWS OF THE WEEK

City Scheme for St. Paul's Precinct

The Improvements and Town Planning Committee of The Court of Common Council of the City of London, in a report being presented to-day, refer to the Minister of Housing and Local Government's comments on the area around St. Paul's Cathedral in his letter to Mr. Fiske giving approval to the County of London Plan.

The report says that the services as consultants of Dr. Holden and Sir William Holford terminated at the end of January, and that, with Mr. Duncan Sandys' approval, it is recommended that Sir William Holford, M.A., F.R.I.B.A., M.T.P.I., be appointed as an architectural and planning consultant to prepare, for the consideration of the City Corporation, detailed proposals for the planning and the architectural treatment of the area around St. Paul's Cathedral for a fee of 10,000 guineas.

The report recommends that these proposals should be submitted in the form of drawings, models, and explanatory statement to include detailed recommendations in regard to:

(a) the layout of buildings and roads in the area around St. Paul's Cathedral and its approaches (including Newgate St., "The New Road," Carter Lane and Ludgate Hill);

(b) the architectural treatment and design of buildings within this area; and

(c) the preservation (or creation) of views of the cathedral from other parts of London and factors affecting the skyline in this area.

"Acceptance and approval, or rejection or modification, of any proposals formulated by Sir William Holford (with due regard to the financial and other considerations involved) to remain with the Corporation; subject to the powers of the London County Council as Local Planning Authority, and subject to the approval of the Minister, in accordance with the Town and Country Planning Acts."

Historic Buildings at Bath: Appointment of Advisory Committee

A special Advisory Committee at Bath has been set up to advise the Historic Buildings Council for England and the Bath Corporation on a programme of repairs to the City's terraces which are of outstanding architectural interest.

The members of the Committee are: Aldermen Berry, Day and Taylor, Councillor Biggs—representing Bath Corporation; Mr. R. R. Henshaw, Mr. G. E. Hughes—representing Bath Preservation Trust; The Earl of Euston, Mr. John Summerson—representing Historic Buildings Council for England; The Lord Methuen, Sir Orme Sargent—independent members nominated by the Minister of Works.

The Committee held its first meeting on March 17. Alderman Berry has been elected Chairman, Lord Euston Deputy Chairman and Mr. Jared Dixon, Town Clerk of Bath, is the Honorary Secretary.

The cost of the programme of repairs to the terraces will be met by contributions from owners, by grants from the Bath Corporation and by grants from the Minister of Works after consultation with the Historic Buildings Council for England. The grants from the Minister of Works will be made under Part I of the Historic Buildings and Ancient Monuments Act, 1953.

Among the subjects which the Committee is considering is the most suitable method for restoring the stone façades of terraces such as The Circus.

A.R.C.U.K.

The Architects Registration Council have been legally advised that an unregistered person who prepares and completes an R.I.B.A. Form of Contract in which he is named as the architect and submits the same to his client for signature would render himself liable to prosecution for unlawfully using the title "Architect" contrary to Section 1 of the Architects Registration Act, 1938.

Planahome Repercussion

William Mathias Carter, of Lloyds Bank Chambers, 4 & 5, King Street, Richmond, Surrey, has been removed from the Register of Architects under Section 7 of the Architects Registration Act, 1931, on a report of the Discipline Committee that he has been guilty of conduct disgraceful to him in his capacity as an architect.

The Council have disqualified him for registration for a period of five years.

This architect had published two booklets containing plans of small houses offering working drawings and specifications for fees ranging from twelve to fifteen guineas. His name appeared at the back of the booklets as Consulting Architect to the publishers but in fact he was himself responsible for publication and the so-called Director was his own nominee.

The Committee found him guilty

(1) by reason of the following passage in the booklets: "The Planahome method of home selection offers you the simple and direct approach which will help you to choose and build your new home and may save you £200 or more in charges for specially drawn up plans and specifications, not to speak of months of frazzled nerves and the risk of a culminating disappointment."

Neither of the booklets contained any indication that an architect is required to supervise the erection of a building and approve the materials selected, the purchaser being left to infer that his interests would be fully protected by the working drawings and specifications.

(2) On the ground that he had publicly advertised himself as an architect by reason of the commendation of his work in the booklets; and

(3) On the ground that he had accepted advertisements from building contractors and manufacturers of building materials and was therefore carrying on a business inconsistent and out of keeping with his duties as an architect.

Architect is Mayor-elect

Councillor G. T. Harman, F.R.I.B.A., is the Mayor-elect of the Metropolitan Borough of Lewisham for the year 1955-56. Councillor Harman was Mayor of the Borough for the year 1952-53.

APPOINTMENT

Mr. Wilfred L. Lowry, A.R.I.B.A., Dip.T.P., A.M.T.P.I., has been appointed Borough Architect and Town Planning Officer for Southport.

CHANGE OF ADDRESS

Messrs. M. E. & O. H. Collins announce that owing to the rebuilding of their present offices they are removing to 34, London Wall, London, E.C.2 (over the Fourth City Building Society's premises) as from Monday March 28, 1955.

The new Telephone No. will be Monarch 6754-5-6.

ANNOUNCEMENT

Mr. Anthony Deacon, A.R.I.C.S., chartered quantity surveyor, has commenced in private practice on his own account at Fitz-Eylwin House, 25, Holborn Viaduct, London, E.C.1.

COMING EVENT

April 5 at 6 p.m. Presentation of the Royal Gold Medal for 1955 to Mr. John Murray Easton, F.R.I.B.A., at 66, Portland Place, W.1.

In Parliament

Piccadilly Land

Mr. Boyd-Carpenter, Minister of Transport, informed Mr. Stokes that about £1,250,000 was to be paid for the balance of 13.4 acres required for the Cromwell Road extension. This included compensation for disturbance and other costs. Mr. Stokes said that the first 36.6 acres had cost £750,000, or approximately £20,000 an acre.

Mr. Stokes also asked the Minister if he was aware that the 146 sq. yds. of land required for widening Piccadilly, costing £20,800, worked out at £686,400 an acre. He wanted to know too, to whom this was paid, and what action the Minister proposed to avoid paying similar sums elsewhere for road widening. Mr. Boyd-Carpenter replied that the L.C.C. told him that the area involved was 167 sq. yds. The land was owned by the Commissioners of Crown Lands. The answer to the third question was "None." Mr. Stokes described this price as absurd and outrageous. Mr. Boyd-Carpenter —If one compulsorily takes other people's property, I think it is reasonable to pay compensation which has some relation to its value. (Mar. 23.)

Parliament Square Statues

Sir Ralph Clarke asked the Minister of Works when the memorial to Sir Thomas Fowell Buxton, which was removed from Parliament Square, would be re-erected, and where. Mr. Nigel Birch replied that he was considering the matter but had not reached a decision. Sir Ralph Clarke reminded him that the Parliament Square Act stipulated that the memorials that were removed should be restored, and that on at least three occasions previous Ministers had said that this monument to the work of Buxton, Wilberforce and others who abolished slavery in the British Empire would be restored, and a place found for it in Victoria Gardens. Mr. Birch said he realized that the feelings of the Anti-Slavery Society were very strong, but so were the feelings of the Royal Fine Art Commission. (Mar. 22.)

Building Research

Mr. Frederick Willey asked the Parliamentary Secretary to the Ministry of Works, as representing the Lord President of the Council, what proposals he had made to the building industry concerning their making a greater contribution to the work of the Department of Scientific and Industrial Research Building Research Station.

Mr. Bevins replied that in their Report for 1953-54, the Advisory Council for Scientific and Industrial Research expressed the view that the building industry ought to make a greater contribution to building research. The Lord President had no doubt that the industry, which now made substantial use of the Building Research Station, would take careful note of the views of the Advisory Council. (Mar. 22.)

Group at the Dinner and Dance of the Northants, Beds and Hunts A.A., held at Overstone on March 11. L-R: Mr. Basil Spence, O.B.E., A.R.A., V.P.R.I.B.A.; Mr. J. L. Womersley, Borough Architect of Leeds and Mr. H. D. Williams, A.R.I.B.A., President of the Association. Mr. Spence presented the Bronze Medal awarded to Mr. Womersley for his King's Heath Shopping Centre, designed when he was Borough Architect of Northampton.

Corrosion Investigation

Mr. Dodds asked, on what date Government-sponsored research into the problems of corrosion commenced; and what progress had been made in a matter that was of economic importance. Mr. Bevins told him that investigations by the Admiralty into the causes of corrosion began sometime in the 17th century. They had continued ever since. Organized research by other Government Departments was of comparatively recent origin. The Ministry of Supply was carrying on work started at Woolwich during the first world war; organized research sponsored by the Department of Scientific and Industrial Research started in 1921; and the Post Office had been engaged on it for at least 25 years. Much progress had been made towards a full understanding of the causes of corrosion and in devising methods of prevention. These methods were being applied both by Government Departments and by industry. (Mar. 22.)

Monopolies Inquiries

Mr. Willey asked the President of the Board of Trade when he expected the Monopolies Commission to report on sand and gravel, and standard metal windows and doors. Mr. Henry Strauss, Parliamentary Secretary, said he understood that the Commission hoped to complete this summer their enquiry into the supply of sand and gravel in certain parts of Scotland. The enquiry into the supply of metal windows and doors was less advanced, and he could not say when it was likely to be completed. (Mar. 22.)

Testing Concrete by Ultrasonic Methods

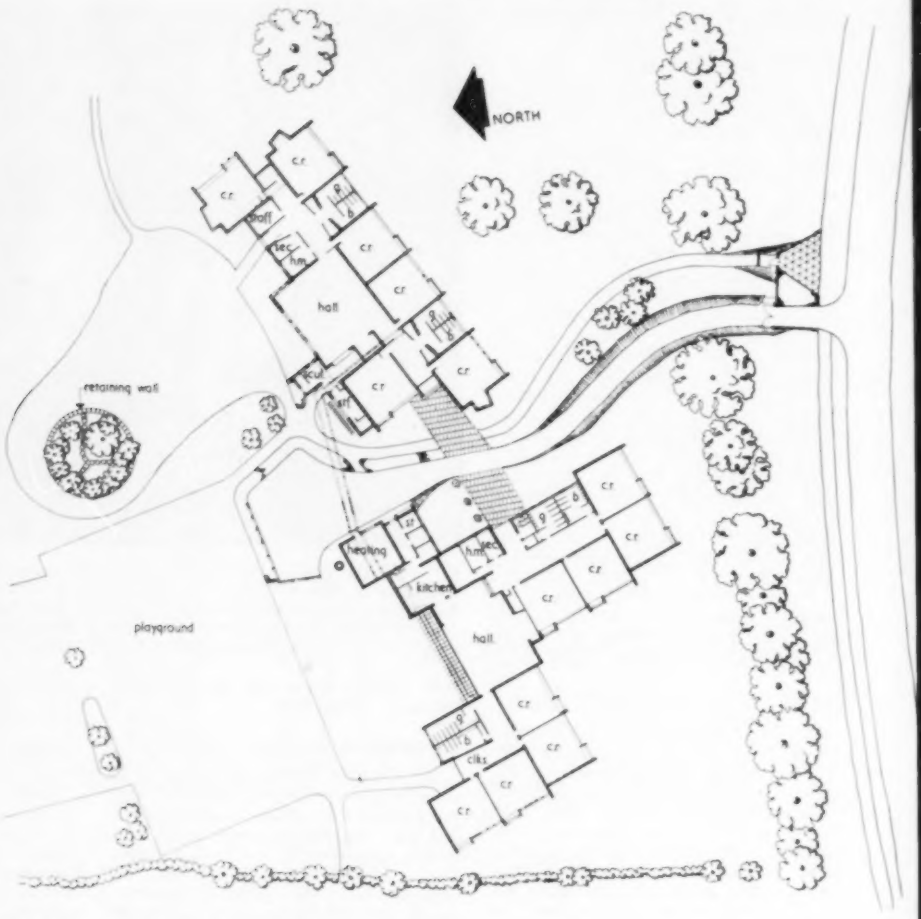
Until recent years the only way in which the physical characteristics of concrete and the changes brought about by ageing and other causes could be determined was by test to destruction carried out on specially prepared specimens. These tests were useful but not entirely satisfactory because of variations in compacting conditions in specimens and structure. The need of the engineer for a non-destructive technique for concrete testing was met by the development, at the Road Research Laboratory, of the ultrasonic pulse method, equipment for which is now manufactured in this country and marketed both here and abroad. A Technical Paper,* just published, describes an extensive investigation of the scope of the method.

The Paper describes the ultrasonic equipment, which uses two transducers placed on opposite faces of the concrete being tested. Pulses are timed electrically as they pass from one transducer to the other through the concrete and the time of transmission indicates the characteristics of the concrete and the presence of internal cracks.

A study has been made of the various factors, such as age, nature and proportions of the mix, moisture content, the presence of mild-steel reinforcing bars and so on, on the transit time of the pulses between the transducers. The effect of these factors on the ultrasonic testing technique is discussed.

* *Road Research Technical Paper No. 34, "Testing Concrete by an Ultrasonic Pulse Technique," is published by H.M.S.O. for D.S.I.R., price 2s 6d, by post 2s 9d.*

PLAN. SCALE: 80ft = 1in



WHITMORE COUNTY PRIMARY SCHOOL, BASILDON, ESSEX

architect : H. CONOLLY, F.R.I.B.A., County Architect

Consulting Engineer : B. J. Nicholls

Quantity Surveyor : E. C. Harris & Partners

THE Client's requirements were a two-form entry primary school formed of separate infants and junior schools, with a kitchen shared by both. A total of 560 places were to be provided.

Site

The site slopes gently from north to south and contains a number of fine elm trees. It is situated in the Fryerns area of Basildon New Town. The north and east boundaries join an area designated as a public open space and the Development Corporation requested that the minimum of fencing be erected in order to preserve the openness of the site.

Design

The design aim was to produce compact and economical buildings by tight grouping of the teaching accommodation around the assembly halls, achieving a feeling of spaciousness by the use of glazed screens between circulation spaces and the hall and the use of colour.

The schools were placed carefully on the site to preserve the maximum number of trees and it has been found possible to preserve and use a fine group of hawthorn trees to make a children's play area within the infants playground.

The method of cloak storage in the infants school is of interest, the children's hats, coats and shoes being stowed in a specially designed unit in their own classrooms; this unit also incorporates other classroom storage.

Construction

Generally the schools are of load-bearing brickwork with tubular metal trusses, which on classroom window elevations are supported on tubular columns. Roofs are formed with hardwood purlins supporting "Stramit" slabs and finished with bituminous felt. The assembly hall roofs are finished in copper.

Classrooms and assembly halls have wood block floors, circulation areas "Accotile" floors and lavatories tessellated tiles. Heating is by means of radiators on a low pressure hot water system using oil-fired boilers.

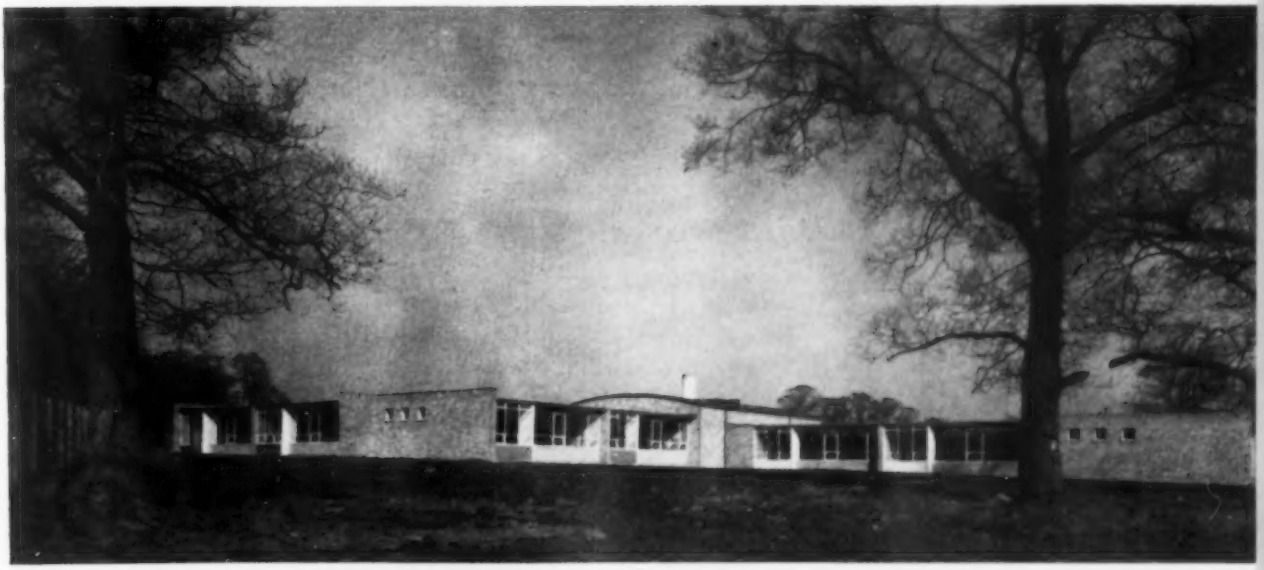
Main entrance to schools

Infant school entrance

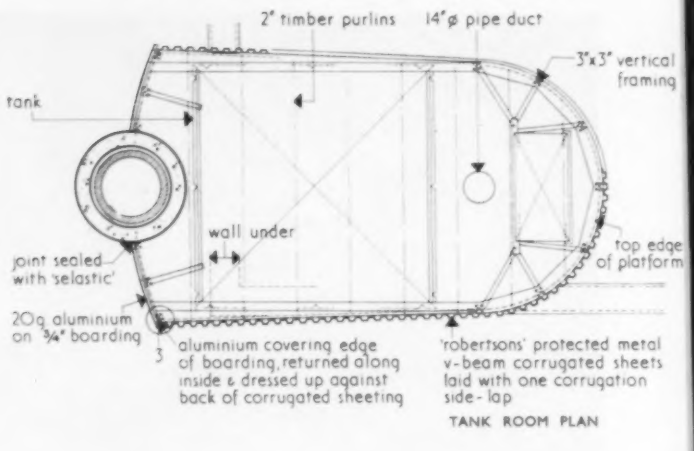
General Contractors:
Leightons (Contractors) Ltd.

Accotile Flooring: Essex Tile & Concrete Co., Ltd. *Chimney Stack:* True Flue, Ltd. *Copper Roofing:* Holloway Metal Roofs, Ltd. *Electrical Installation:* Tucker Bros. (Essex), Ltd. *Felt Roofing:* Wm. Briggs & Sons, Ltd. *Flush Doors and Stressed Plywood Eaves Units:* Walter Lawrence & Son, Ltd. *Heating & Hot Water Installation:* Watkin Heating Co., Ltd. *Ironmongery:* Lockerbie & Wilkinson (Birmingham), Ltd. *Roller Shutters:* G. Brady & Co., Ltd. *Roof Decking:* Stramit Boards, Ltd. *Sanitary Goods:* John Bolding & Sons, Ltd. *Tubular Trusses:* Scaffolding (Great Britain), Ltd. *Wall & Floor Tiling:* Carter & Co. (London), Ltd. *Windows—Metal:* The Crittall Manufacturing Co., Ltd. *Wood Block Flooring:* Vigers Bros., Ltd.

Junior school from south-east



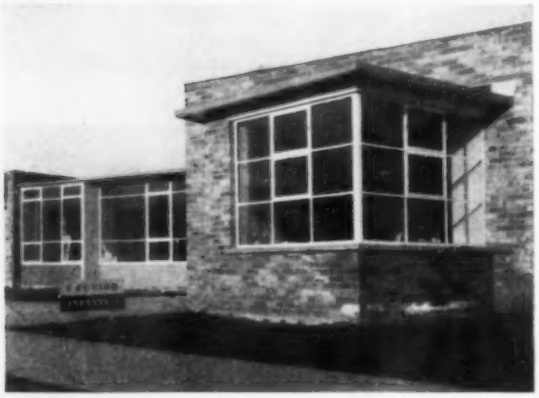
Tank room

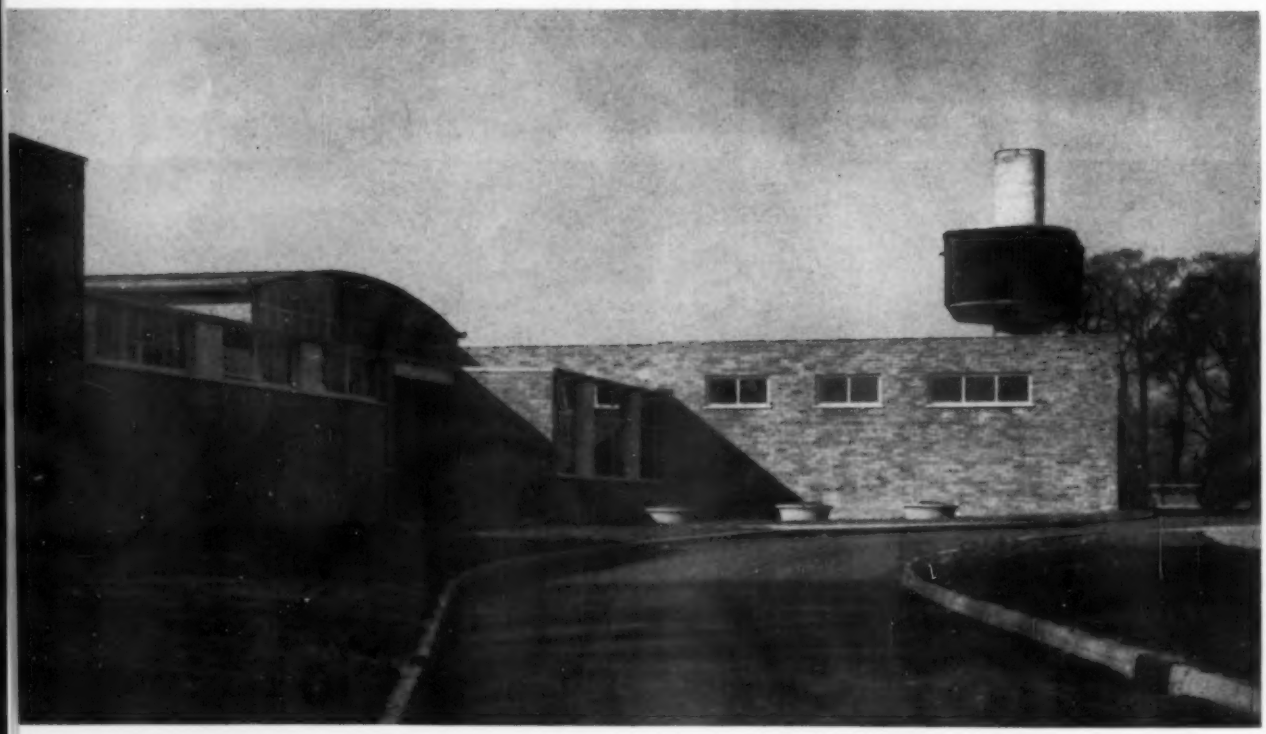

2" timber purlins
14"ø pipe duct
3"x3" vertical framing
tank
wall under
top edge of platform
joint sealed with 'selastic'
20g aluminium on ¾" boarding
3
aluminium covering edge of boarding, returned along inside & dressed up against back of corrugated sheeting
'robertsons' protected metal v-beam corrugated sheets laid with one corrugation side-lap

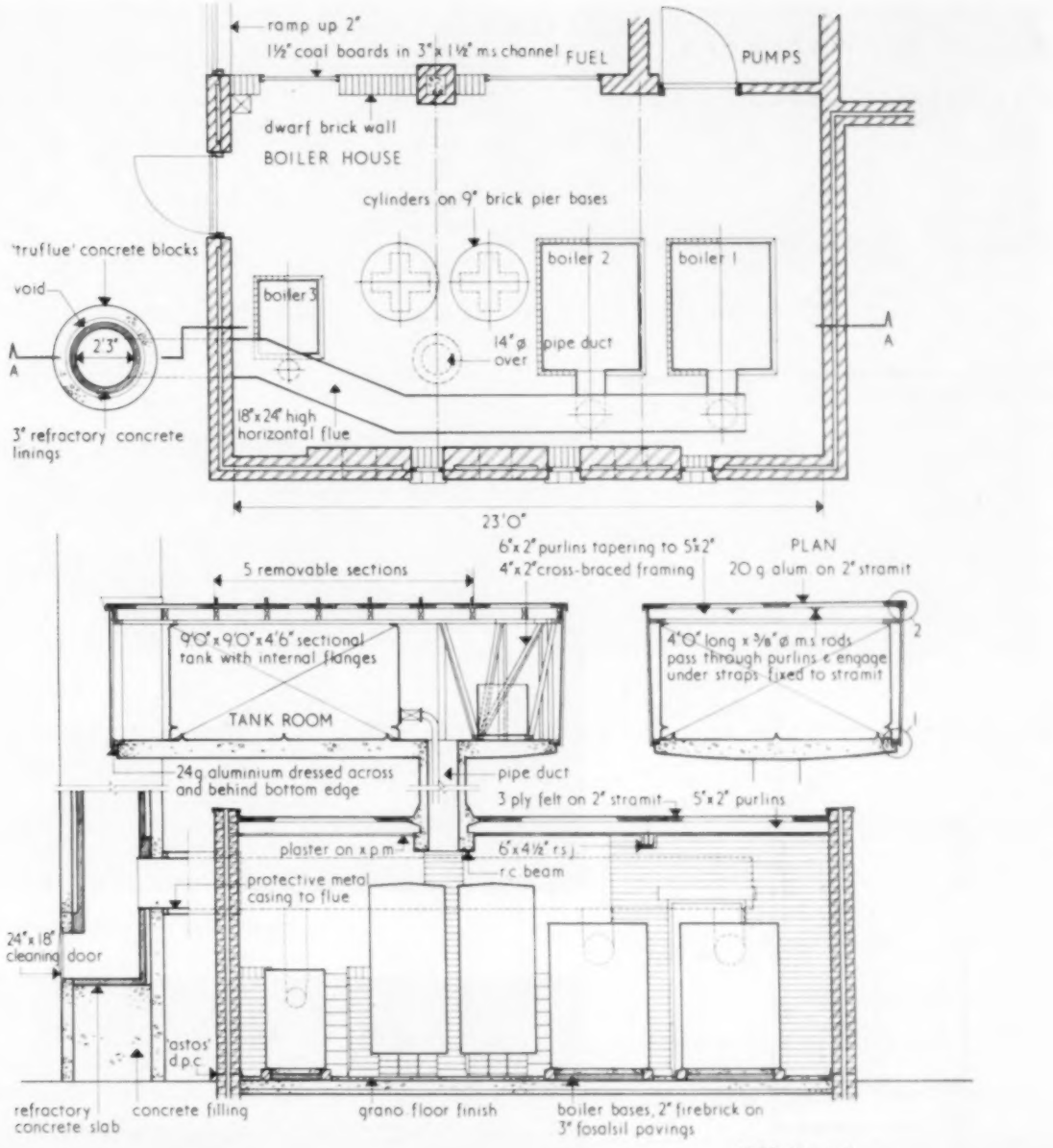
TANK ROOM PLAN

Whitmore Primary School, Basildon

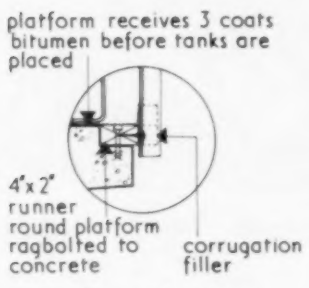
Main entrance and boiler house. Bay window, infants' classroom



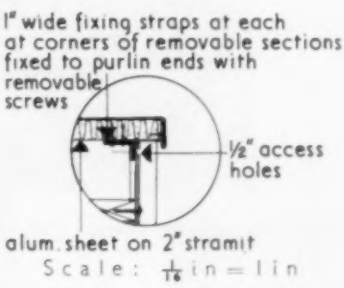




BOILER HOUSE AND TANK ROOM DETAILS. SCALE: 1 in = 6 ft

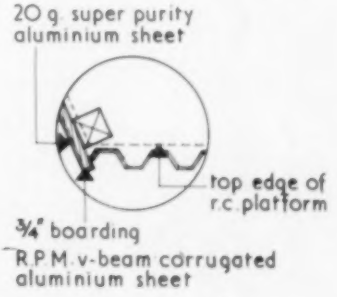

platform receives 3 coats bitumen before tanks are placed
4"x2" runner round platform ragbolted to concrete
corrugation filler

Detail 1


1" wide fixing straps at each at corners of removable sections fixed to purlin ends with removable screws
½" access holes
alum. sheet on 2" stramit

Scale: 1/6 in = 1 in

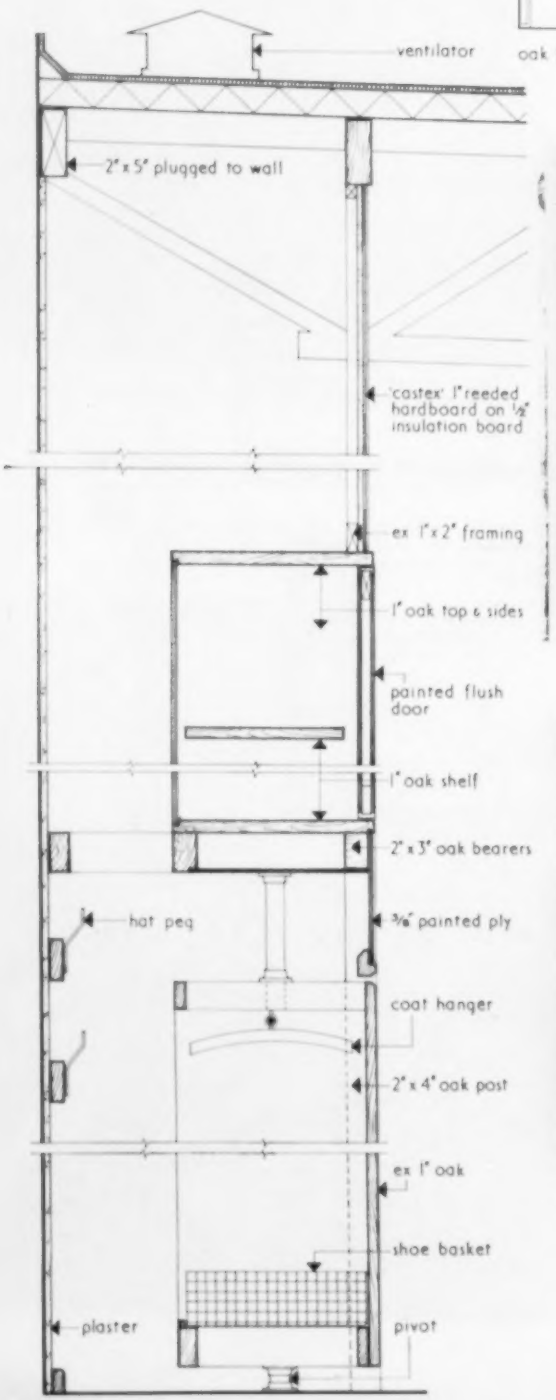
Detail 2

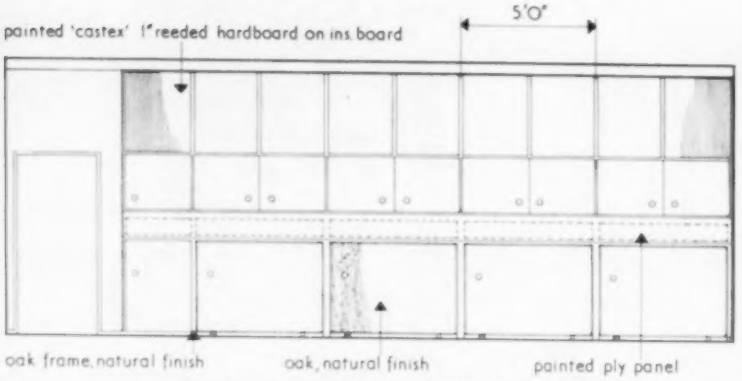


Detail 3

Basildon Whitmore Primary School

Section through fitting. Scale: 1in = 1ft

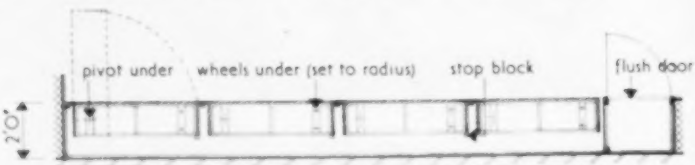




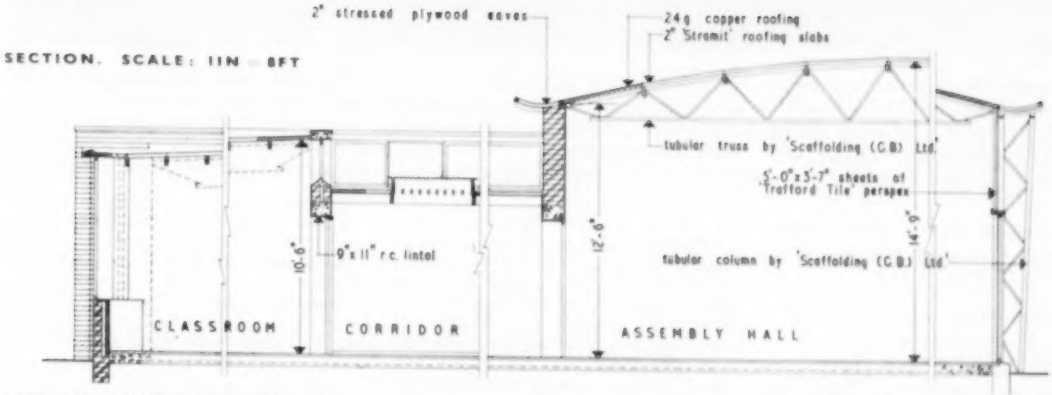
Cloakroom fittings, Infants' school. Scale: 1in = 6ft

Infants' classroom with bay window

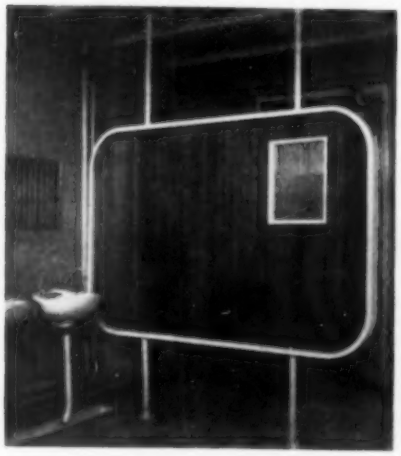
Cloakroom fittings. Plan below shows lower half. Scale: 1in = 6ft



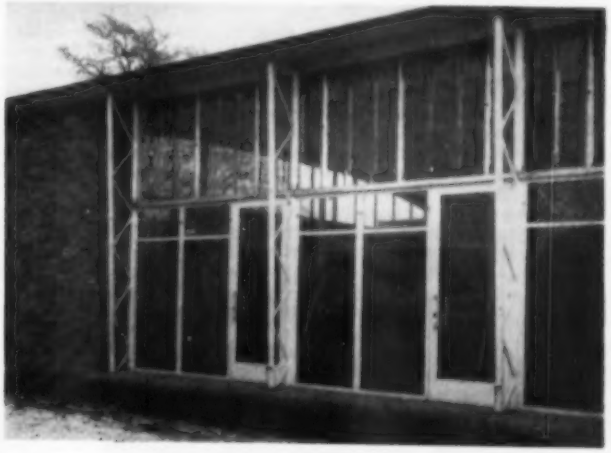
Assembly hall

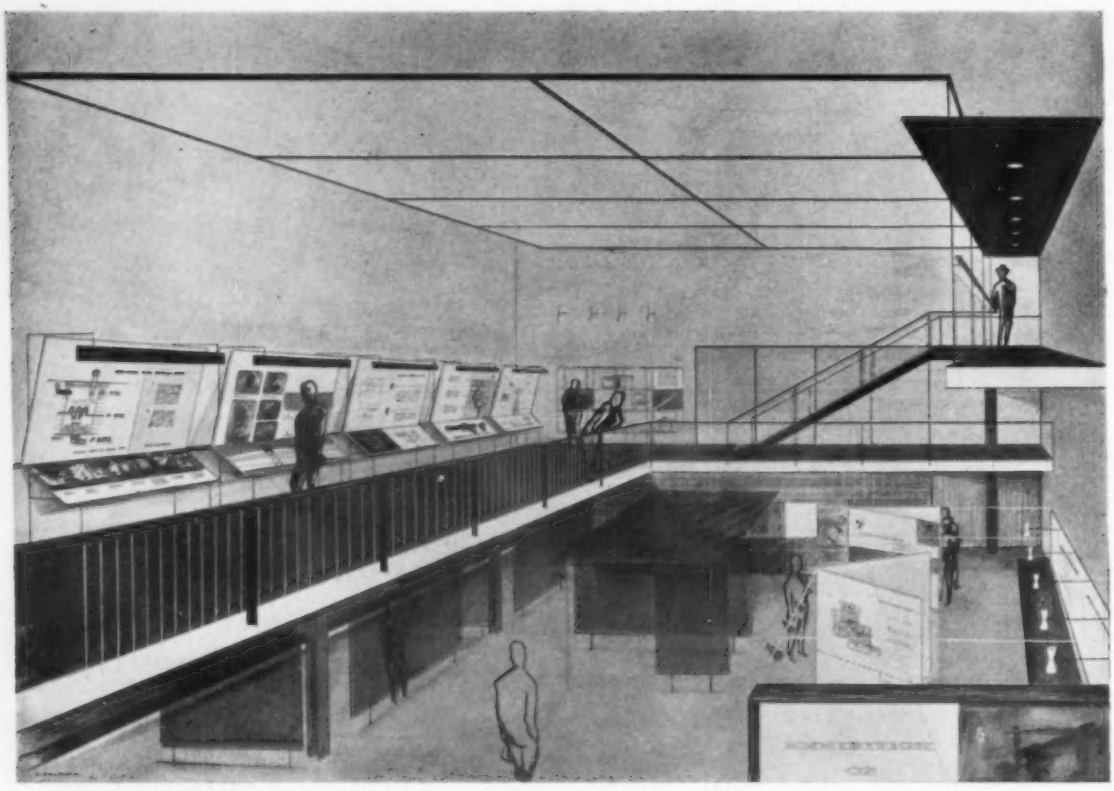


Screen in boys' lavatory, junior school



Tubular supports and corrugated Perspex, assembly hall





The Council of the Royal Sanitary Institute has agreed to plans submitted by Sir Hugh Casson for the redesigning of its Museum of Health. The scheme, involving expenditure of several thousands of pounds, is to be put in hand at an early date. Structural alterations include a new translucent, suspended ceiling, new wall surfaces, the provision of a wider gallery, improved floor surface, and a self-contained cinema. When completed the museum will be the finest of its kind in the United Kingdom. The perspective shows what part of the new museum will look like when completed.

Payments under the Town and Country Planning Act, 1954

Closing Dates for Submitting Claims

Persons who hold claims on the £300 million fund under the Town and Country Planning Act, 1947, have until April 30 to apply to the Central Land Board for any payment to which they may be entitled.

The Board have already received over 36,000 applications, but it is believed that many others are outstanding.

The most important cases where a payment may be due are:—

(i) where development charge has been paid on the land covered by the claim;

(ii) where the land concerned was sold or leased for less than its full value to a public authority before January 1, 1955, or privately before November 18, 1952;

(iii) where the land was given away before November 18, 1952;

(iv) where the claim was purchased before November 18, 1952, and has been owned separately from the land.

Persons who do not hold claims on the £300 million may also qualify under (i) or (ii) if they bought land in respect of which a claim had been made.

The Central Land Board have sent forms of application for payment to claim holders whom they have been able to identify as having paid a development charge or as having sold their land to a public authority, but anyone who thinks he is entitled to a payment for any event which occurred before January 1, 1955, other than a planning restriction (see below), and has not received an application form, should write to the Board for one without delay.

Planning Restrictions

Claim holders who have been refused permission to develop their land, or have had onerous conditions imposed on a grant of planning permission, may be entitled to a payment from the Ministry of Housing and Local Government. The closing date for applying is June 30, if the planning decision was given before the end of last year. Forms of application can be obtained from any local authority.

To help those who believe they may be entitled to compensation, the Ministry of Housing and Local Government has produced a 6d. booklet "Town and Country Planning Act, 1954—How to Claim Payments—A Guide for Owners of Land," obtainable from H.M. Stationery Office, or through any bookseller.

The Marley Tile Travelling Scholarship for the Study of Architecture in Mexico, Venezuela and Brazil

The response to the announcement for this Scholarship, value £750, totalled some 72 applications from all parts of the world, and the assessors have been in some difficulty in arriving at a short list of candidates who were interviewed. The assessors were unanimous in awarding the Scholarship to Gordon Graham, Dip.Arch., A.R.I.B.A., of Nottingham. Mr. Graham is 34½ years of age. He is in private practice and is a lecturer at the School of Architecture, College of Arts and Crafts, Nottingham. He was awarded the Arthur Cates Prize at the Royal Institute of British Architects in 1953 and the Essay Prize by the Anglo-Brazilian Society in 1954. The architect members of the selection committee, appointed by the Council of the Architectural Association (Howard V. Lobb, C.B.E., F.R.I.B.A. and H. T. Cadbury-Brown, F.R.I.B.A., A.A.Dipl.(Hons.), would like to congratulate the Marley Tile Company on the number and quality of the applicants.

LIBRARY NOTES

Building Materials, Their Elasticity and Inelasticity

Edited M. Reiner, assisted by A. G. Ward.
Nord-Holland Publishing Co., Amsterdam. 1954. Price 84s.

THIS is the latest volume in the series of monographs on the rheological behaviour of natural and synthetic products appearing under the general title "Deformation and Flow" and edited by J. M. Burgers, J. J. Hermans and G. W. Scott-Blair.

The Editor states in his introduction that the book aims to help (1) the civil engineer, in designing with those materials which do not obey the classical laws of elasticity, and (2) the technologist who is concerned with the manufacture and use of building materials. Chapters dealing with various materials or groups of materials are written by leading research workers in those particular fields; in most cases this policy has been successful, but some authors have tended to take so specialized a viewpoint that the aims set out by the Editor are far from being realized. The views expressed are sometimes highly controversial and are at times in conflict with those of other contributors to the book. While the editor has recognized this situation and has drawn attention to it, it is a pity that in the general chapters he did not attempt to resolve these difficulties. Had he done so, the aims he set himself might have been more nearly attained.

These general chapters give a comprehensive treatment of rheological theory, the chemical and physical background to rheological systems, and the theory of structural design. Although difficult reading, they are valuable condensations, and much of the material has not appeared before in connected form.

The materials dealt with in the rest of the book are: Metals and Wood, both considered as mainly elastic, Plaster and Mortar, Fresh Concrete, Set Concrete, Road Asphalt, Soils, Earth Walling, Clay Products and Minor Materials. As indicated earlier, some of these chapters are more in the nature of research papers written for discussion and criticism; this part of the book is, however, of wide interest and well repays study. Readers of this journal may be disappointed in finding no mention of the slump test in the chapters on concrete, and may think they are offered very little guidance on prestressed concrete. Soils, metals and wood are particularly well covered; these, of course, are fields in which many of the ideas now grouped together under the title of rheology have found acceptance over a longer period of time.

The book is well produced with good illustrations. There are, unfortunately, a few misprints and errors, and in some instances the style of English which results when an author is not writing in his mother tongue tends to obscure the meaning.

As the Director of Building Research states in his preface, at the present time many theories are being evolved of limited application and validity. The task of unification is therefore both urgent and difficult. Dr. Reiner and his team of distinguished authors are to be congratulated on the efforts they have made to this end.

R. W. NURSE.

The Town and Country Planning Act, 1954, together with the Town and Country Planning Act, 1953

By Derek Walker-Smith Lewis, F. Sturge and Alistair Dawson. Published by Eyre & Spottiswoode (Publishers), Ltd. Price 40s.

NEARLY three-quarters of this 40s book consists of reprints of the Acts of 1953 and 1954 and of certain Regulations under the 1954 Act. The remaining quarter of the volume consists mainly of a General Commentary and of notes upon the various sections of the Acts.

A commentator upon an Act of Parliament has a wholly different task laid upon him from that of the Parliamentary draftsman. The fact that the Parliamentary draftsman is composing not explanatory matter but a legislative instrument creates a gulf between him and the public, even the professionally interested public, which it is the commentator's task to bridge.

On the whole, the best method is as far as possible to treat under separate heads the different subjects and problems with which the Act deals. The able commentator will then extract the material relevant to that subject and problem and will proceed to show how apparently disparate matters in different sections and schedules are, in fact, inter-related and will illustrate the process by example. Such a method is quite distinct from, indeed incompatible with, the process adopted in this book of merely appending notes to the sections in order of their appearance in the Act.

Even the procedure here applied is abandoned (in favour of no procedure at all) when one comes to the complex and important Second Schedule of the Act which is exhibited in stark notelessness. The agreeable task of showing that Section 9, which appears at first sight in some respects to overlap earlier provisions in Part 1, in fact dovetails in tidily with these earlier provisions is one which has failed to attract our authors. Of course one knows very well that they could have done the job admirably had they really tried.

Admixtures for Concrete

Committee 212 American Concrete Institute Report Proceedings V51 from the American Concrete Institute, 18263, W. McNichols Rd., Detroit, Michigan, U.S.A. Price 75 cents.

THIS exhaustive report of the American Concrete Institute covers all the materials which may be added to concrete for any purpose; many of these will be of no interest to architects in this country, for example there is a section dealing with retarders for slowing down the setting of concrete used to plug oil wells. Three sections are of interest, the first concerns accelerators for use in cold weather but adds little or nothing new to our knowledge of the use of Calcium Chloride.

The second deals with air entraining agents and describes the performance of many materials available in this country together with their use and the theory of their action. It omits the fact discovered here that if the concrete is to be vibrated, much more of the agent is required to give similar results to that in hand compacted concrete.

The third section covers "waterproofing" agents thoroughly emphasizing the fact that these add to the resistance of good concrete but are of little use with poor quality concrete and bad workmanship. Throughout the report the reader may see confirmation of the opinion held by many engineers in this country that admixtures in the U.S.A. are often used to make up the deficiencies of low-grade concrete, whereas here the tendency is to use greater control with better quality concrete. A large bibliography completes this survey of the subject.

J. M. P.

Surveying and Levelling for Students

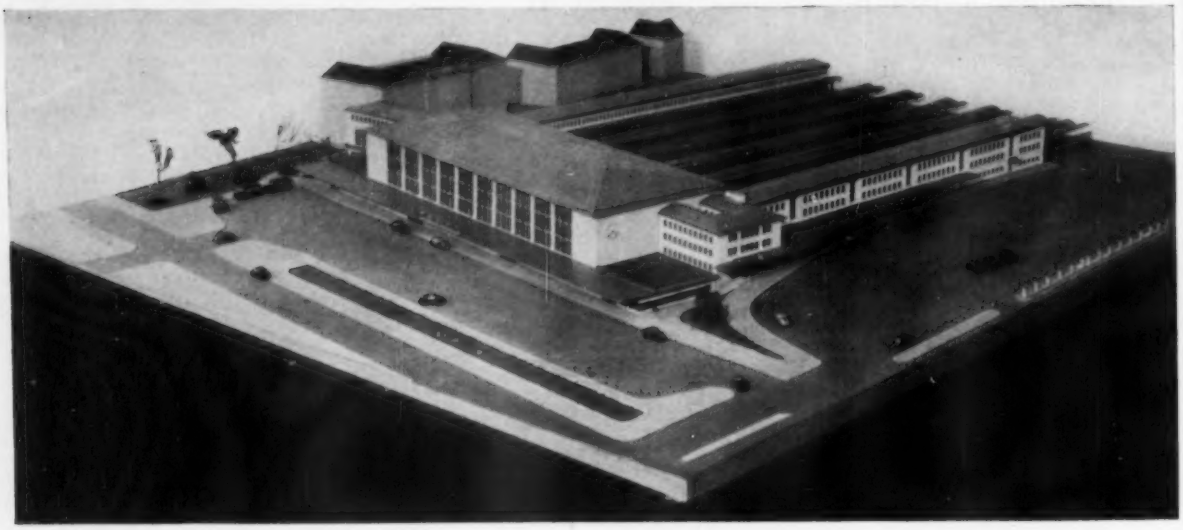
By Bernard H. Knight, D.Sc., Ph.D., M.I.C.E. Contractors' Record, Ltd. Price 18s.

THIS book, as its title explains, is meant for students, particularly for those preparing for examinations in surveying and levelling. All too many books on this subject go into great detail, thereby confusing the student and presenting the idea that it is a most complicated subject. Detail has been kept to a minimum but the various aspects have been well covered and the illustrations should help the student, whether he be working on his own or studying at a technical college, to master the art.

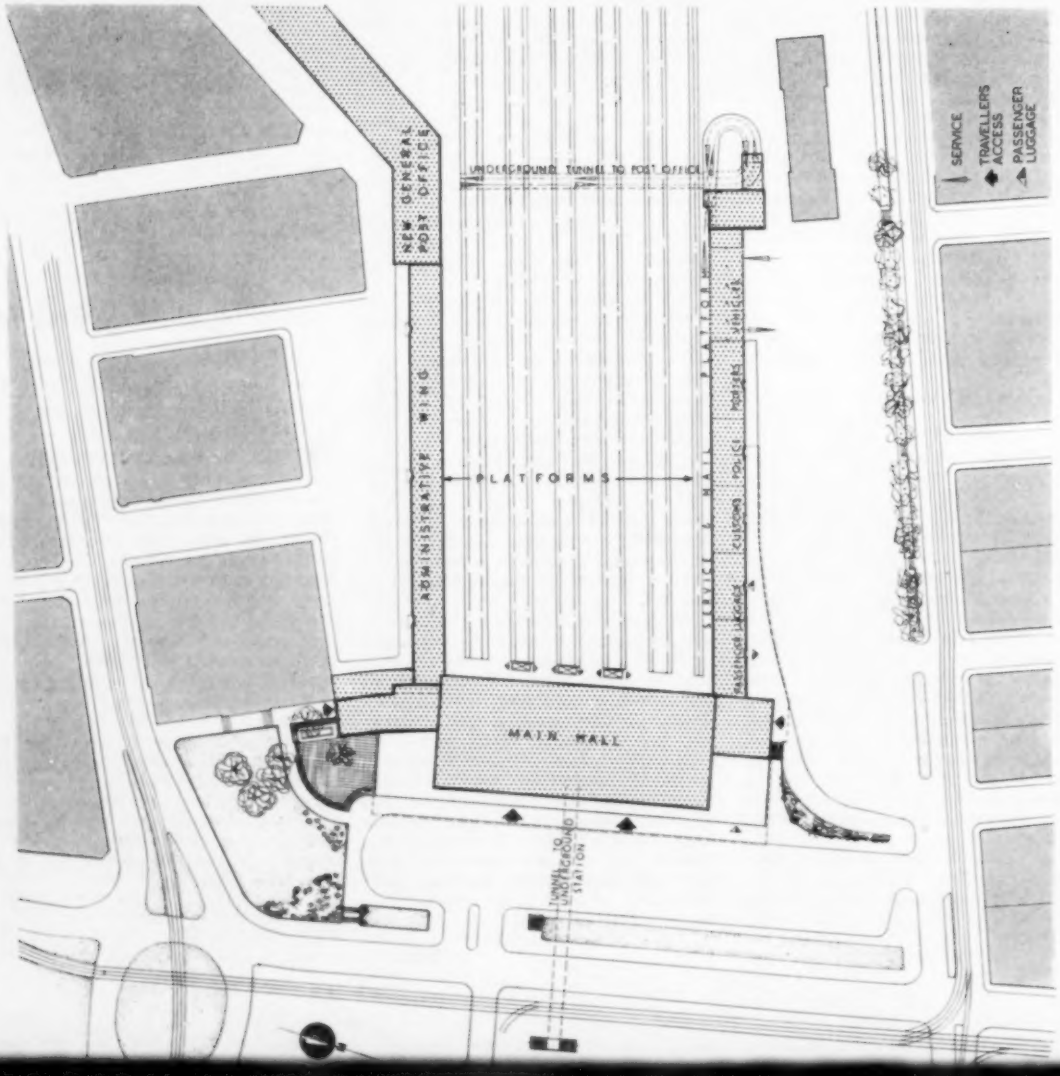
It is pleasing to observe that the author has made his primary aim the combination of the fieldwork in surveying and levelling with the office-work, and to show the student how these two are bound up, one with the other. Unfortunately students do not appear to appreciate this fact.

M. E. T.

WESTBAHNHOF STATION, VIENNA



The model of the winning design.



ARCHITECTS: HARTINGER AND WÖHNHART

THE station buildings existing before the war, whose gaunt and grimy severity will be recalled by many travellers to Vienna, had been in use for nearly 90 years before their almost complete destruction early in 1945.

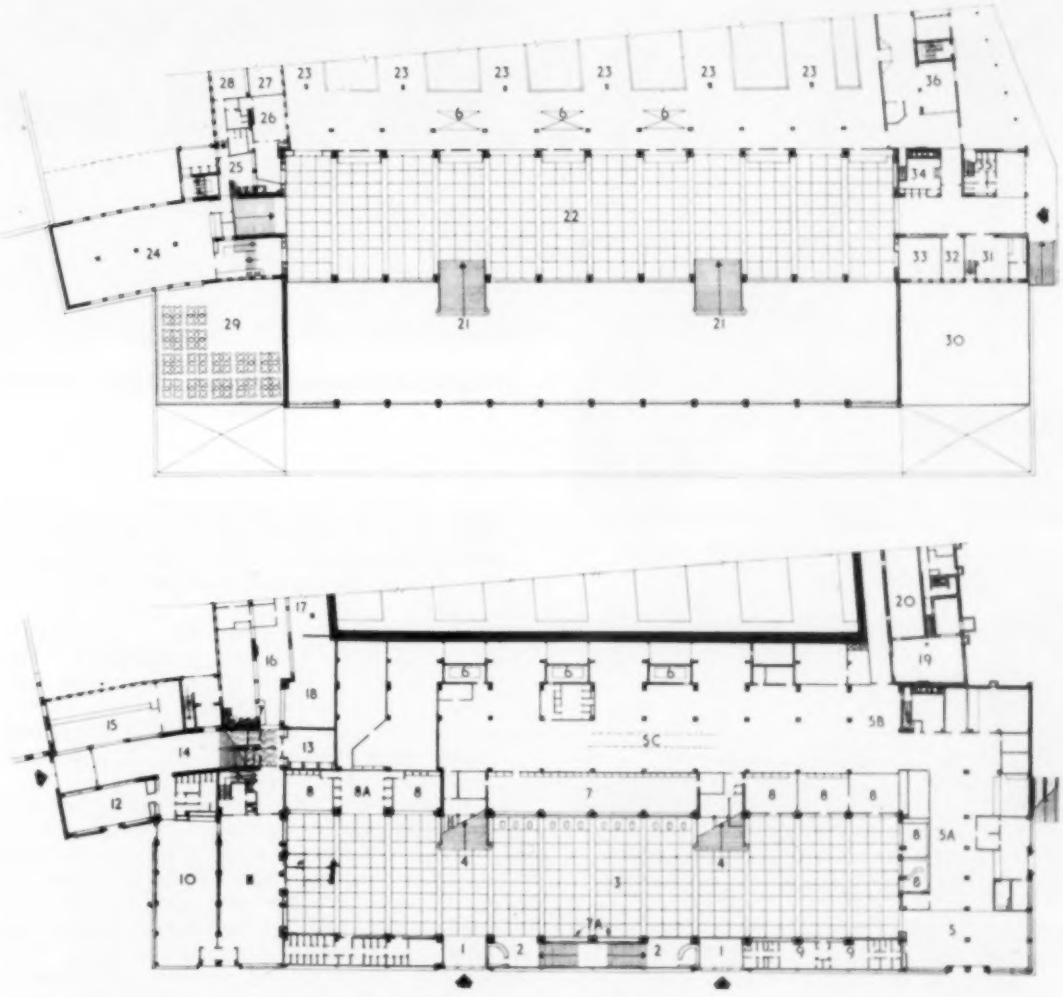
In 1949 the Austrian State Railways held a competition for the design of a new station and ancillary buildings. Fifty-five entries were received, and the first prize was awarded to the Architects Hartinger and Wöhnhart.

Construction was to be commenced in May, 1950. The months preceding that date were spent in detailed discussions and conferences between the Architects and the Railway and Town Planning Authorities. The re-siting of the main entrances to the station gave rise to road traffic problems, which were solved by a major road improvement scheme in the vicinity of the station carried out concurrently with the construction.

Simultaneously with the erection of the station, the railway system which it serves was electrified, yet there was no interruption of main line services.

The construction of the complete scheme took just over four years.

In accordance with present Continental practice, the arrival and departure platforms, of which there are six, are roofed only by concrete butterfly canopies with glass aprons. The platforms are separated by a series of swing doors from the main booking hall, which takes the form



KEY TO PLANS: Plan at Street Level

1: ENTRANCE. 2: STAIRS TO UNDERGROUND STATION. 3: BOOKING HALL. 4: STEPS TO UPPER LEVEL OF MAIN HALL. 5: PASSENGER LUGGAGE RECEIVING OFFICE. 5a: LUGGAGE WEIGHING, STORAGE, ETC. 5b: LINK TO UNDERGROUND TUNNEL. 5c: SERVICE DUCT. 6: LUGGAGE LIFTS TO PLATFORMS. 7: BOOKING OFFICES. 7a: TIME TABLES (SEE PHOTO NO. 11). 8: SHOPS. 8a: TELEPHONES. 9: BATHS AND HAIRDRESSER. 9a: LAVATORIES. 10: RESTAURANT. 11: CAFETERIA. 12: COFFEE AND PASTRY SHOP. 13: LOUNGE BAR. 14: STAIRS TO UPPER LEVEL. 15: BRANCH POST OFFICE. 16: KITCHEN. 17: MEAT AND VEGETABLE STORAGE AND PREPARATION. 18: PASTRY KITCHEN. 19: HEATING PLANT. 20: SOLID FUEL STORAGE.

Plan at Platform Level

6: LUGGAGE LIFTS. 21: STEPS FROM LOWER PART OF MAIN HALL. 22: UPPER LEVEL OF MAIN HALL. 23: PLATFORMS. 24: RESTAURANT 25: SERVERY. 26: WAITING ROOM. 27: WAITING ROOM FOR ORGANIZED PARTIES. 28: DINING ROOM FOR DITTO. 29: RESTAURANT TERRACE. 30: BUFFET TERRACE. 31: BUFFET. 32: HOTEL ROOM REGISTER. 33: SIGNALS CONTROL ROOM. 34: LEFT LUGGAGE. 35: LAVATORIES. 36: PASSENGER LUGGAGE.

Above : The main entrance. Restaurants and terrace in the foreground

Left top : Administrative wing

Left centre : Side entrance

Left bottom: Administrative block and one of the restaurant terraces

of a vast concourse 300ft long and 100ft wide, and is on two levels. The upper level, leading to the platforms, also contains administrative offices and a number of shops, is spacious enough to render traditional waiting-rooms unnecessary.

Two broad flights of stairs lead to the lower hall, parallel to and at the same level as the main approach street. Here are placed the booking offices, information services, baths, hairdressers, post office and luggage service. There is direct access from this hall to the nearest underground station. Luggage can be taken from this level direct to the platforms in three goods lifts.

As is customary in Austria, catering facilities are more than generous. The main restaurant, together with two quick-service cafeterias and a restful and intimate coffee shop, seats 500 persons, and many more in the summer months when the outdoor terraces are in use.

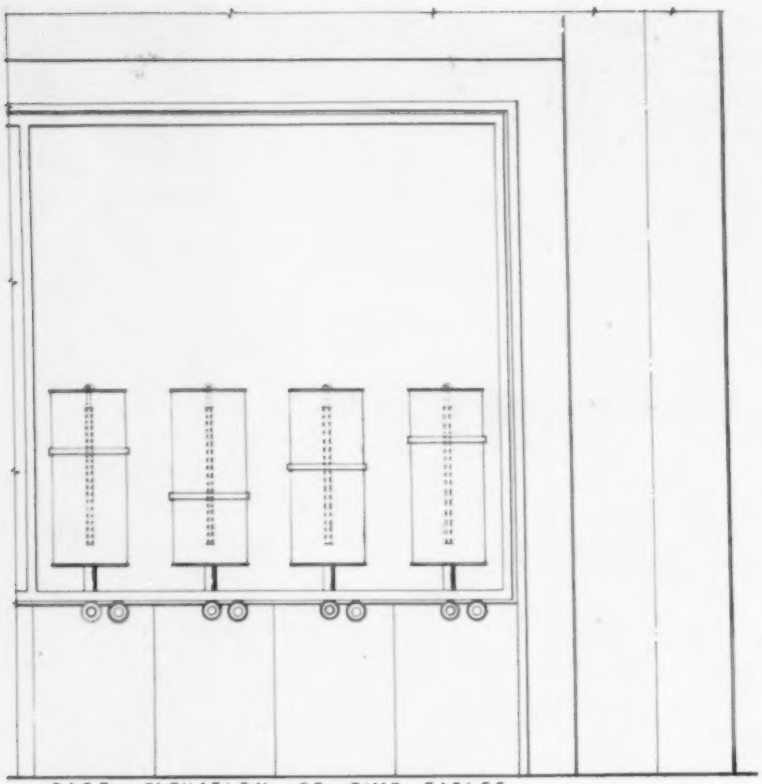
Two three-storey wings, at right-angles to the main hall and parallel to the platforms, contain administrative offices, a number of staff flats and overnight accommodation for travel couriers and other officials. Employees' facilities include what is reputed to be the most up-to-date skittle alley in Europe at which international matches are played.

Construction

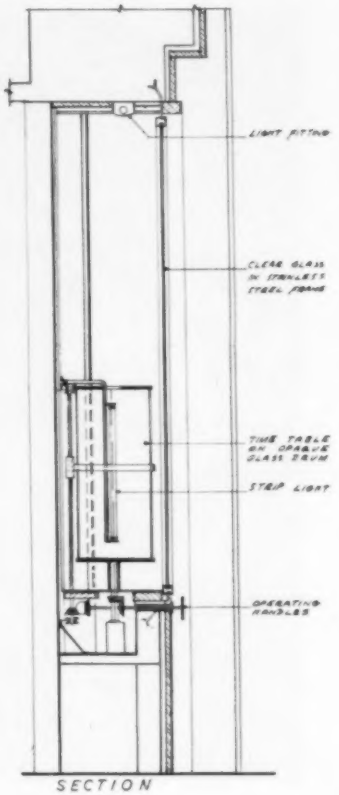
The main hall has a reinforced concrete frame, and a roof of steel trusses covered with lightweight slabs of brick aggregate and finished with mineral-surfaced felt. The

The main hall at night. The end wall is to be covered by a mosaic mural, which was the subject of a national competition

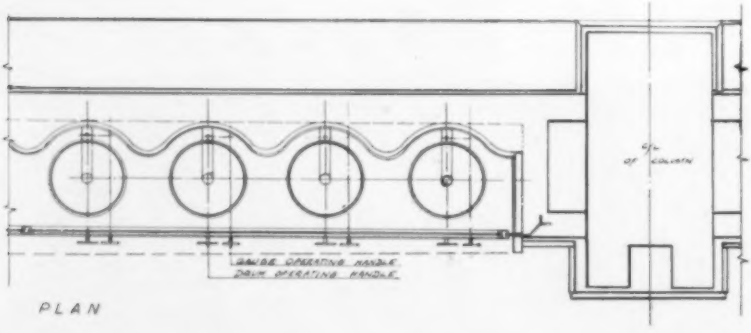
The platforms, looking towards the main hall



PART ELEVATION OF TIME TABLES



SECTION



PLAN

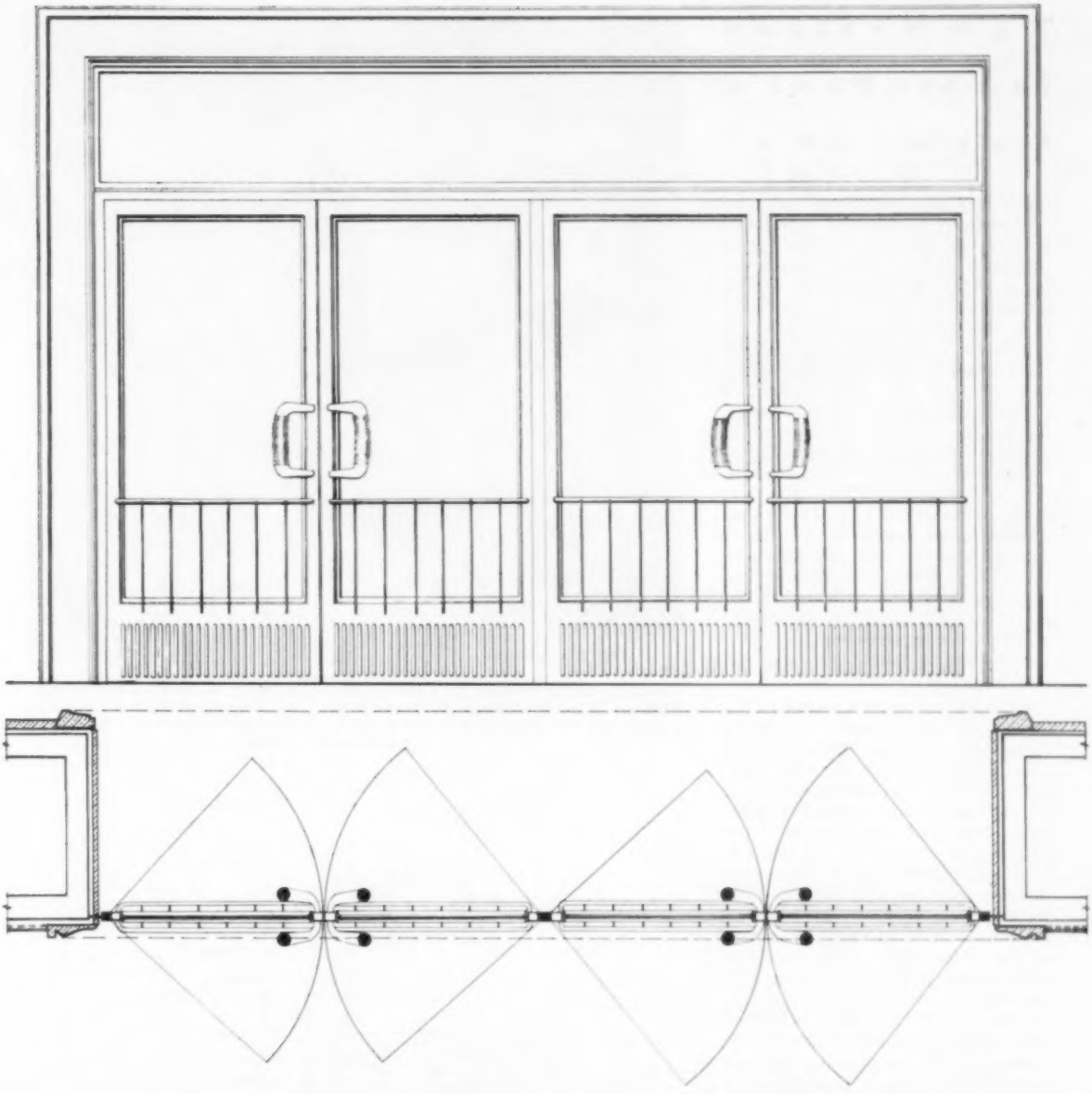
One of the departure indicators in a frame of stainless steel. This is one of the many details designed by the Architects. Time tables are mounted on revolving drums. Adjustable gauges aid reading.

Stainless steel swing doors, leading from the platforms to the upper level of the main hall.

entrance canopies are covered in sheet copper, being visible from the restaurant terraces.

The southern administrative wing is constructed of *in situ* reinforced concrete, and the northern wing of load-bearing brick. Both these wings are rendered externally, but the main hall and important elevations have a cladding of stone slabs.

The choice of internal finishes was largely determined by the necessity to use materials requiring a minimum of maintenance. Slabs of Austrian marble cover the walls in the main hall and the public rooms, while the restaurants are panelled in various hardwoods. In order to gain experience of the durability of various flooring materials, terrazzo, artificial stone, asphalt compounds and rubber tiling were used in various positions.



The suspended ceiling in the main hall has been designed for sound absorption, and consists of purpose-made timber units filled with glass wool and soffits of acoustic tiling. Continuous lighting troughs are incorporated in the ceiling.

Services

Heating and hot water for the whole building is provided by two central boiler installations, suitable for oil or coke firing. Heating is variously by radiators, ceiling panels and hot air grilles. All sanitary installations are internal and served by a mechanical ventilation system.

An underground tunnel, running the full length of the station, accommodates all service cables and pipes, and serves as the connecting link between the platforms and the new General Post Office, which will be built adjacent to the station.

The Setting for St. Paul's Cathedral

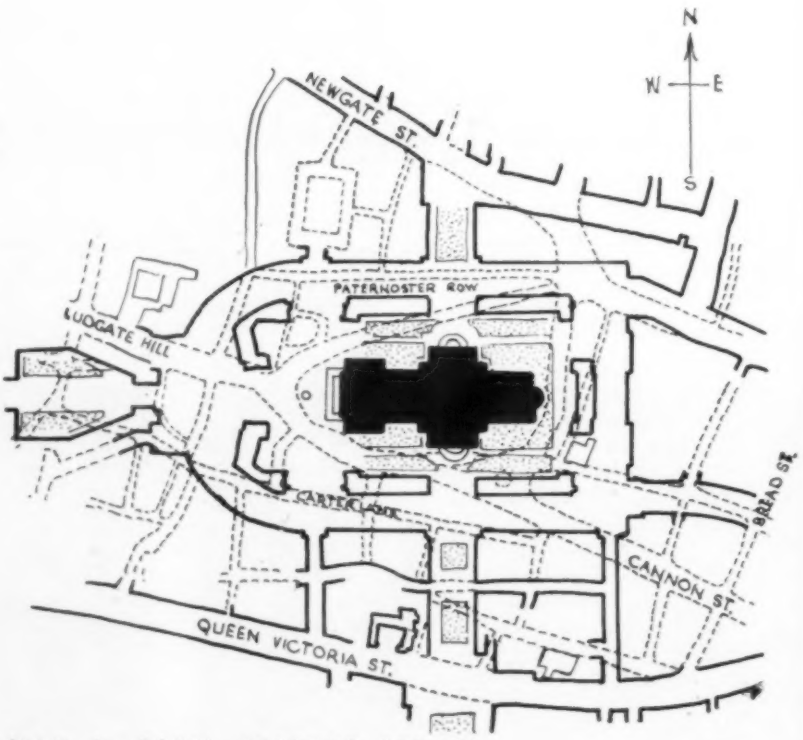
THE recent statement of the Minister of Housing and Local Government upon the St. Paul's area was "that a unique opportunity is being missed to provide a truly worthy setting." How right he is can be seen from the closing up of the views of St. Paul's by rebuilding just east of the Cathedral. That he has modified that part of the London County Council's Development Plan covering the St. Paul's area to permit possible changes is important and encouraging. If one may interpret this as meaning that no further rebuilding is to be allowed in the vicinity of St. Paul's until a much bolder scheme for a generous setting, proper to the importance of this national shrine, has been worked out, then the situation to-day is much more encouraging than one dared hope a few months ago. One hopes such a scheme will be widely publicised before being put into effect also.

Although the eastern aspect of St. Paul's has been largely prejudiced there still remains, one hopes, a chance to do better on the other three sides; and indeed to retrieve something on the east by eliminating the buildings along the Cathedral side of the proposed new road. For this eleventh hour opportunity a lot of serious rethinking must be done untrammelled by approvals of plans for buildings not yet started or by visions based upon the aspirations of Wren or of any other generation but our own, for it is the mid-20th century we live in and it is upon what we do or fail to do that we shall be judged by future generations.

While the Royal Academy Plan of 1943, seen in plan 1, brought widespread criticism for its retrogressive dreams of some 250 years ago and sought to justify them by saying that what Wren thought was right must be right to-day, it at least had the merit of boldness and breadth of conception which appears to have been lacking to-day. His scheme failed for the same reason as we are failing to-day by the predominating influence of land values over principles of good town design.

If, therefore, Mr. Sandys can step in and stop the rot, good town design may yet become a reality and St. Paul's may yet achieve the dignified setting it deserves as a symbol of the sacrifice made by so many in the last war. To see so many city workers forced to recline in huddled congestion upon

This is the best of the ideas for a setting for the cathedral put forward in the Royal Academy Plan. This triumphal approach from the Thames demands a far wider avenue than that allowed for in Plan 2 which is altogether too mean. It is an avenue that is required, not an alley.



PLAN 1: ROYAL ACADEMY SCHEME

paving stones in the midday "break" is a pitiful recognition which the terms for the design of the Garden of Remembrance epitomised, and the setting envisaged in the Holden/Holford 1947 Plan did little more.

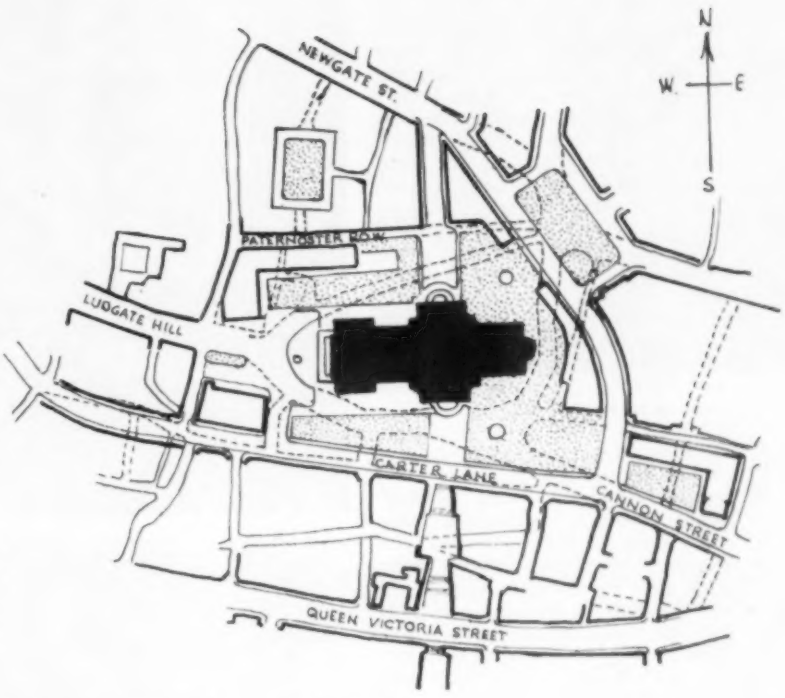
This part of the City is notably lacking in park amenities and any setting for St. Paul's should be considered from that point of view as part of the architectural problem. Certainly the City's thousands cannot be satisfied by the present meagre allowance. But the problem of St. Paul's is not confined to what happens in its immediate environs for it is a landmark for a very wide area and questions inevitably arise as to what height and bulk of building should be permitted to compete, if at all, with St. Paul's in the various silhouettes of the city seen from many vantage points along the Thames and elsewhere.

Is the scale of St. Paul's to be so changed as to become as insignificant as Marble Arch where the Cumberland Hotel was built? This does not necessarily mean that there should be no tall, sky-scraper kinds of buildings but that their location must be carefully considered in relation to St. Paul's in the general silhouette views of the city especially those from the river bridges and banks. The Barbican scheme of tall buildings might have a most undesirable effect upon these silhouette views which the Englishman so proudly points to his foreign guests and to his children. There are, therefore, strong sentimental reasons in support of this important æsthetic amenity.

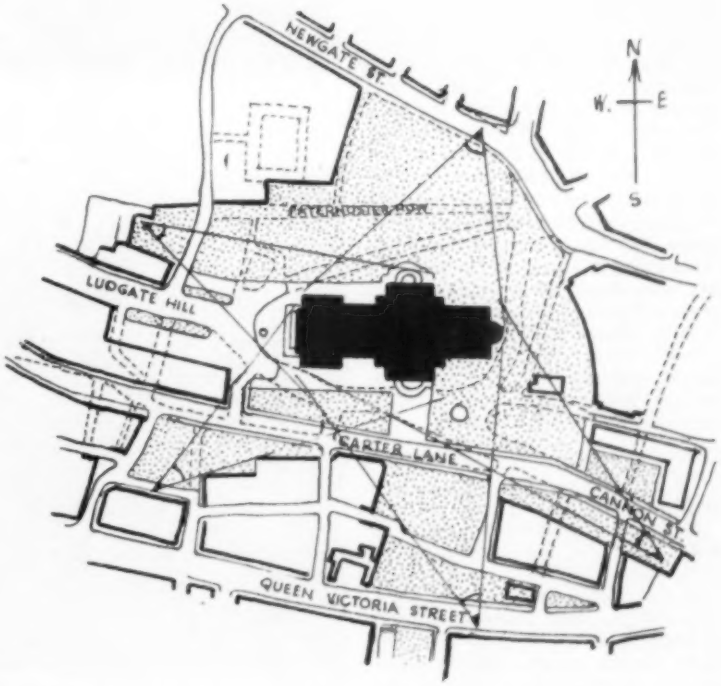
One concludes, therefore, that the immediate environment for St. Paul's should be determined from a broad principle that, in a descending scale, there should be less emphasis in building development the nearer one approaches the Cathedral from more remote parts of the general setting. In other words, the density of building should become less and open space amenities should become greater as one comes nearer the Cathedral. Thus, what one loses in floor space near the Cathedral could and should be made up in parts more remote from it and in so doing revive semi-derelict areas.

Coming from the general picture to the particular, one would find that the broad land use planning of the former makes possible the bolder and more generous need for open space in the use of land as the basis for a carefully designed immediate setting for the Cathedral.

What would seem practicable and indeed offer an interesting and worthy setting is for the open space to be extended in several directions in an



PLAN 2: PRESENT PROPOSALS



PLAN 3: SUGGESTED OPEN SPACE PROVISION

informal manner between widely spaced building blocks sufficient for St. Paul's to be observed as a whole from many different view points that the blitz made possible. The intervening land between such blocks would be laid out as parkland and the buildings kept low in height to enhance the scale of the Cathedral. Such an arrangement could offer a great variety of compositions or pictures with the Cathedral as the dominant motif. Traffic should be encouraged to skirt the precinct so formed as suggested in plan 3. The new road planned (but not yet built) to link Cannon Street with Newgate on the east side of St. Paul's should be eliminated, including the roundabout which takes up so much of the open space.

Thus, an irregular shaped open space would surround St. Paul's in a manner in keeping with modern architectural thought in which buildings are conceived as designs seen from many different view points, while at the same time providing for more park space for the relaxation of city workers in their off-working periods. For this object no particular street, whether Carter Lane or Paternoster Row should be regarded as boundaries to a formal public square reminiscent of the Renaissance era.

An open architectural town planning competition

How that setting should be designed is a matter for very careful consideration of many possible solutions. The best way to do that would seem to be to hold an open competition limited only to British architects to include an opportunity (not so far given) to the younger generation of architects to express their ideas. The competition conditions should be designed to encourage modern conceptions and to determine, approximately, the boundaries of the open space leaving its design and the general silhouette of surrounding buildings to the competitors who should also be required to give expression to their scheme in one or more general pictures from certain vantage points. Such a competition should have Government backing perhaps through the agency of the Royal Fine Arts Commission.

ANALYSIS OF THE PRESENT SITUATION

West Side

The need for more elbow room from which to stand and appreciate the architecture of St. Paul's is self evident from the attempt to do so with these camera shots. Photo 1 taken at the top of Ludgate Hill shows how close the flanking buildings come when trying to get far enough away to take in the whole silhouette of the Cathedral.

1 | 3
2 | 4

Is the scale of St. Paul's to be so changed as to become as insignificant as Marble Arch?

5

7

9

The Setting for St. Paul's Cathedral

6

8

10

11

12

South Side

The south side is even more impossible to comprehend and one is immediately obstructed by the tall range of buildings left standing by the blitz on the south side of St. Paul's Churchyard. These buildings were supposed to come down and the whole area cleared of buildings up to Carter Lane, but even that would not suffice unless the clearance was at least partly extended down to Queen Victoria Street in more than one direction as suggested in plan 3. The importance of this is seen in photo 2.

East Side

From the east new building works have already partly destroyed the opportunity for a proper setting, but there may still be time to retrieve part of the situation. Photos 3, 4 and 5 show remnants of the blitz seen from the line of the new road planned to link Newgate with Cannon Street. Owing to its closeness to the Cathedral the latter cannot be seen properly and even then much will be further excluded from view when the new buildings are built between this new road and the Cathedral as can be seen by the heights of these remaining buildings. Photos 1 and 6 show how clearly the Cathedral could be appreciated had the opportunity, now lost, been taken to preserve a greater depth free from building development away from the Cathedral. As it is, the new Bank of England building which already has its foundations constructed, will soon blot out views from the East and greatly restrict that in photo 6.

The valuable contribution made by the setting back of Gateway House has made possible such views as in photo 7. Photo 8, from the Garden of Remembrance, shows how restricted views become when possible only from close quarters. But the best prospect from the east can be seen in photo 9 and that will be destroyed when building takes place on this south side of Cannon Street unless a similar set back is insisted upon as suggested in plan 3.

North Side

Here all the old pre-war buildings in varying stages of delapidation give the extent of obstruction as seen in photos 10, 11, 12 which surely should be avoided. This messy conglomeration of buildings seen from opposite Newgate Underground Station effectively hide any reasonable prospect. Is this unfortunate condition to be perpetuated by rebuilding or is the opportunity to be grasped to provide much more open space also on this north side? The present great clearing a few yards away shows how necessary it is to keep the land free from building up to Newgate Street.

DEREK PLUMSTEAD

Modular Co-ordination Research —the Evolving Pattern

Extracts from the paper read at the Modular Society's Meeting on March 24, by W. A. ALLEN, A.R.I.B.A.

WE are treating this study as a straightforward research and development programme, and this implies a certain pattern of attack common to scientific work generally. There is first a period of observation and study of facts that seem relevant, from which one eventually tries to infer some law or principle or hypothesis which relates and explains them and from which other particular facts can be inferred; and finally attempts are made to obtain experimental proof of a sufficient number of the inferred facts to establish the general validity of the hypothesis. When this has been done one has a sound starting point from which to embark upon the development work by which the established principle is given practical application.

This is only a description of a scientific type of study in general terms, so let me convert it into the more familiar terms of the building industry. First, the observational phase. This, of course, has several sides in our kind of study. One wants to know, for instance, what modules have already been advocated and used, both here and abroad, and what the experience has been of their use and of any planning grids associated with them. Another important matter to know about is the array of dimensions in standardized and other products already used by the industry (Martin spoke of this in his paper), and to what extent they are flexible or are fixed by the nature of the material or manufacturer. These are examples only, and various other kinds of information, more or less important, come into the picture.

Then there is the business of the "hypothesis" or general idea which brings the facts into some systematic relationship. This is the focal point of the problem, for in our present subject it is the question of the module or modules, and whatever succession of preferred dimensions it is thought necesary to fix along with them. We have spoken about this in recent months as the "number pattern" because we felt we would need a group of related dimensions, but we did not know what kind of pattern or arrangement they might form.

Finally, having arrived at some arrangement of dimensions that seemed suitable for modular working, we anticipated a period of testing to see whether it stood up to the various kinds of demands which architects and industry might make upon it, or in what ways it could be modified to improve it. This is the counterpart of that aspect of scientific working which is devoted to proving the principle.

Perhaps all this seems too deliberate, or too "scientific" for the nature of the problem. I am sure some people feel so, and would prefer us to go more directly to our goal. Let me then tell you frankly our feeling about the matter. We are trying to reach what we believe to be the main objective of modular co-ordination, which is to have a simplified pattern of dimensions around which the whole of the industry, wet and dry, architectural and constructional, can organize itself. I think most people share this view, for any objective which aims at part of the industry only is, as we see it to-day, risking the raising of barriers in the future to the natural development of building practice and its simplification and economy. Similarly, any unsound foundation for modules chosen to-day will risk the soundness of the superstructure ultimately erected upon it. That is why we feel that this is a time to work scientifically, for it is the only way known to man for learning with reasonable certainty. If it takes two or three years, that is not long in relation to the history of building.

Reviewing Experience

British experience of modular working lies almost entirely in prefabrication, mostly for schools but partly for housing, to the extent of some £30-£40m. annually in completed buildings. Outside this there are various supplementary kinds of dry construction, mostly curtain walls, partitions and suspended ceilings, which struggle to find a dimensional "niche" that is co-ordinated to something or other, but nobody is quite sure what it should be. A certain number of products for conventional building are related to the brick and might be said to be co-ordinated roughly but not formally.

We concentrated first on the prefabrication systems which really were intended to be modular, and tried to appraise the experience which designers, builders and makers had of them, in terms of time, cost and quality. On this aspect we made a fairly detailed examination of the experience of the Architect's Department of the Herts County Council, and careful studies of two firms which make parts for prefabricated buildings, as well as undertaking site assembly. We have recently added reviews of three timber systems, and some others.

Studies of prefabrication alone obviously could give us only limited help in applying modular ideas to conventional building, for they omit the brick and block construction which is and will remain for some time the main substance of the industry. We had therefore to consider how we could make good this deficiency. Fortunately it came to our notice through the meetings of the European Productivity Agency, when the whole project was being discussed, that in Germany modular ideas had been extensively applied to conventional building. We therefore arranged a fairly detailed study of this during the early studies, and it proved most fruitful.

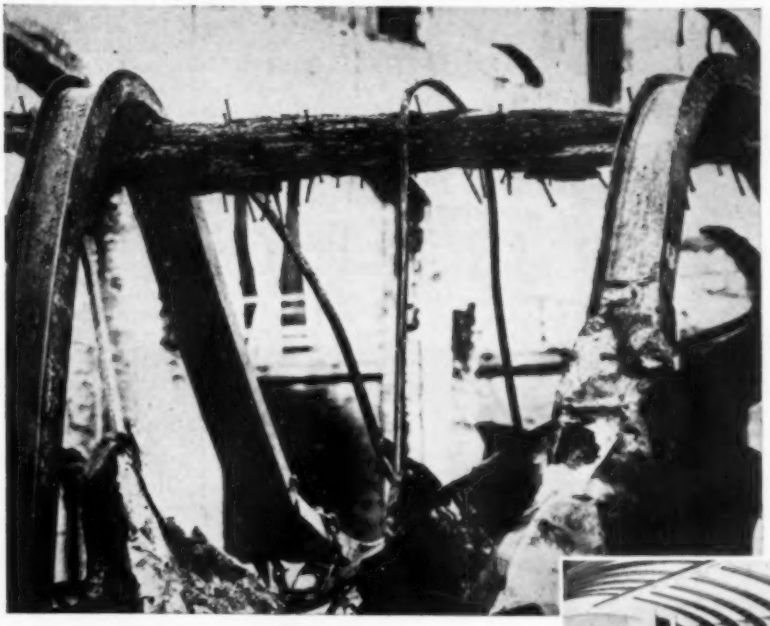
Before I go any further, I must say something about terminology. We all know that "traditional" building has been changing a lot due to mechanization, partial-prefabrication and so on and is no longer traditional. We also know that "prefabrication" can be interpreted to mean all kinds of factory and site manufacture, both wet and dry, as well as whole "systems" of prefabrication. We need some clarification, and for my own purposes now I am going to use the term "conventional" to represent the buildings which in British construction are based on relatively heavy combinations of masonry, steel and concrete, using a fair amount of water and *in situ* construction. Then I will use "prefabrication" to mean systems of construction using rather large factory-made components, mainly put together by dry methods; and things like curtain walls, ceiling systems and prefabricated partitions will be generally called "dry assemblies."

Architects' Experience

Architects' experience of modular work is more varied and extensive in Britain than might be thought at first glance. Many offices have used planning grids, and quite a number of offices have done modular development work of various kinds, sometimes on parts of buildings such as partition or ceiling assemblies, and sometimes on whole building systems. All of these play a part in the general

[Continued on page 395

Laminated Timber...



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Modular Co-ordination —the Evolving Pattern

concept of modular design, the plan grids because they will normally be spaced on a modular basis, and the dry assemblies because interchangeability of parts is entirely dependent on some kind of dimensional co-ordination.

The outstanding fact upon which all are agreed is now probably fairly well known. It is that prefabrication on a modular basis can effect a major economy in architects' offices. In the Herts County office the time spent on working drawings for schools was cut by roughly one-half. Part of this gain has been absorbed sensibly by giving more time to design and study, and of course the finished schools show the benefit as they do in other counties working similarly. At the same time, in appraising the economies effected, one must remember that the Herts office devotes considerable time to development on its own account.

Their practice is to hold a pool of standard details and one might think that the gains are due merely to this, and that they are possible therefore with any standardized system. This is part of the truth but not the whole story. The significant factor is flexibility. You can if you want push drawing office economy to extreme limits simply by the kind of standardization that goes together only one way, as some of the "kits of parts" for post-war houses did, and then you do not need to do any drawing-office work at all before using the products. But this kind of approach is so inflexible and its use so limited that it has little to do with the main stream of modular co-ordination, a vital objective of which is to facilitate the assembly of building products in a variety of ways as great as practicable. Flexibility is one of the distinctive merits of the prefabrication systems for schools, and its significance in this argument is that flexibility depends largely on dimensional or modular co-ordination and the drawing-office economy comes not merely from standardization alone but from a kind of standardization that is based on modular working.

It seems reasonable then to infer that modular working applied to building generally can lead to the same kinds of economies, and in fact we see it as one aspect of work later on when we come to active application and development, to ensure that drawing-office economy and flexibility is made a specific objective. Even the small architect's office ought to be able eventually to benefit from the standardized detailing possible with modular development.

I am sorry to have taken so long developing this point, but while some people accept it readily, others have wondered about its validity.

I have said that we cannot possibly review all architectural experience of modular working, but this does not mean we do not want to know about it. We will very much appreciate receiving any information that can be sent to us, and we particularly need to know about different sizes of plan grids architects have used and why they chose them. If an architect feels he has more to contribute than he can reasonably put in a letter, we will do our best to come and see him if he will let us know.

Manufacturers' Experience

In 1954 we examined closely the work and results of two of the firms making parts for modular prefabricated schools, and we obtained most interesting information.

There are many details I cannot review here for I must keep to main points. Undoubtedly the outstanding one is the big increase of productivity and the simplification experienced. In one firm where steel framework is designed and fabricated both on a conventional and a modular basis side by side, it was found that each draughtsman on the modular side can see three times as much steel placed per annum as his opposite number in conventional work. In addition to this, advance ordering is simpler and more accurate, less skilled work is needed, and the standards of skill needed in the office, in the factory and on sites, can be reached more quickly. All of these gains were ascribed partly or wholly to the simplification of modular working and all that it implies.

In the other firm much the same sort of thing was found. Estimating was quickened and made more accurate, and productivity in the design and drawing offices and on site was about doubled. In addition modular working encouraged interchangeability while keeping down jig costs and smoothing out production.

All these are gains, but modular working probably does not lead that way in all respects. For instance it may be generally the case that the standardized use of framing components would make them heavier or more complicated on average than when designed for one condition only, and whether this leads to greater overall costs when offset against other advantages of working on a modular basis will depend on circumstances. Overall costs are generally competitive at present, but no marked economy is evident. Possibly this is due to the working of market conditions rather than strict logic, but we must also remember that all this development is in its infancy still.

Many opportunities have been taken to talk to builders and their foremen about their feelings of doing prefabricated work. No clear cut consensus of view is evident but it is obvious that such work affects their organization a great deal because it makes a change in the balance of demand for one trade or against another, and in the ratio of total building force to supervisory staff. Some reactions against this were to be expected and were found; but opinions had not formed very fully.

German Experience

The German experience was very interesting to review. So far as housing is concerned Germans turned their backs on alternative forms of construction after the war and devoted themselves to improving output of conventional work. As a basis for this they introduced a number pattern for dimensional co-ordination into the German Standards (Federal Standard DIN 4172) and required construction and planning to be based on it wherever a subsidy was sought. Although application varies from poor to very good, they claim with reasonable justice that three-quarters of their 400,000 houses in 1953 were modular, and last year they say that virtually the whole of their 520,000 houses were basically modular, which represents a value p.a. of completed buildings of the order of £600-£700m. The system has been thought out with bricks and blocks as a background though it is probably flexible enough to carry a considerable variety of techniques.

The number pattern or table itself is quite interesting. It is called "Preferred Building Numbers" and has two sides, one generating from a 12.5 cm unit and the other from 10 cm. Both sides develop in module intervals, with smaller sub-divisions for certain purposes, and emphasis on some larger intervals for other purposes. The 12.5 cm side is used for bricks, blocks and all carcassing (i.e., construction dimensions) while the latter is used for planning, each cell of a plan generally having its own 10 cm grid. Each side seems to have emerged from a school of thought that held its particular module to be suitable for both planning and structure, but in practice it is said that the combination has practical arguments in its favour. One is that if the inside dimensions of rooms are laid out on a 10 cm grid, and the carcase is on a 12.5 cm basis, plaster finishes, skirtings, and so on fill the discrepancies between the carcase module line and the plan module lines with less resulting trouble than the conflicts which would occur if

Modular Co-ordination —the Evolving Pattern

one attempted to relate basic structure, finishes and planning around one module, and had the thicknesses of plaster, skirting and other trim as an overlap from the carcassing onto the plan grid. The viewpoint must be examined in detail with respect for the experience it represents, though in certain ways it may not attract at first glance. It is, of course, one aspect of the "thickness" problem.

The German standard for dimensions is supported and extended by standards for various classes of products, and by Federal standards for storey heights and certain other planning factors.

In operation, as I said, German practice is variable. The best practice, so it seemed to us, was to be found in Schleswig-Holstein where in addition to the Government organization there was formed a Society called "The Working Team for Up-to-Date Building" whose function was to encourage co-operation among the various people concerned with building. Briefly, it then proved possible to concentrate design practice and production around a limited number of the modular standards, chosen to function with an agreed range of room sizes, house depths, roof pitches, stairways, and so on. Thus house depths of 6.25, 7.5, 8.75 and 10.0 metres were used, based on a 5-module grid (62.5 cm), and the floor beam spans are organized in similar increments. Certain conventional relations were fixed between the grid and the carcassing to smooth out assembly difficulties. Production of standard units and assemblies was then organized to correspond to the agreed conventions. The result is a considerable flexibility in design, and an economy which the authorities say brings their houses some 15-20 per cent below the cost of comparable houses in the remainder of the country. It was impossible to appraise the accuracy of this, but given honesty, good standardization, low production costs in factories, simplicity of design, the advantages of packing for shipping, and familiarity on the site, perhaps the figures are not too surprising, and it may be significant that similar figures have been reported for similar work elsewhere.

This is modular practice developed in what seems to be quite a sensible manner for low-cost housing. A particular merit is that flexibility is greatest where it is most needed. For example, a very limited range of modular doors and windows is available, but they can go anywhere on plan and elevation within multiples of the base module.

In sum, both freedom of design and reduction of cost are shown to be possible by the use of products whose dimensions are chosen from a series of related numbers. Modular co-ordination provides this relation and it is used in Schleswig-Holstein to co-ordinate a range of standards. One cannot escape seeing a marked similarity between this development and some of the proposals of the Bailey Committee, and their implementation may deserve more effort than they received.

It is known that both Poland and Russia are using modular co-ordination extensively based on a 10 cm module and certain preferred dimensions, and there are references to the production of standardized parts which sound not unlike the Schleswig development in principle. But we have not yet obtained much information.

Cost Studies

One effort was made during the year to establish a technique for separating out the economic advantages of modular co-ordination from those of prefabrication by analysis of costs of several schools, but present methods and information were not able to give us what we wanted. It is hoped to make further efforts to obtain such data in the later stages of the work.

The Study of Product Sizes

It will be necessary before very long for us to know what dimensions of important building products are fixed, either rigidly or fairly firmly, by function, manufacturing process, or some other cause, and what dimensions might be changed if there were good reason to do so to fit into an operating modular system. Product sizes which are immobile will naturally influence the final selection of some of the modular dimensions in any framework finally devised.

Although this work was not planned to form part of the general review of experience, the latter had gradually given rise to it, and it is now in full swing. The field has been divided between ourselves and the B.S.I. in a convenient manner to get through it as quickly as may be. I cannot summarize any findings at this stage but it is proceeding smoothly.

The First Stage in Retrospect

All this early work had several purposes. Chiefly it was intended to give us familiarity with the existing experience, and to reveal as exactly as possible what kinds of advantage might be hoped for in various directions, what order of economy might be expected, and what difficulties might already have displayed themselves.

The main observations will, I think, be evident, but to them must be added Martin's studies at the B.S.I. showing the extent of the present spread, and the great lack of order. Some 15-20,000 items are covered by Standards at present, and only the vaguest pattern of dimensioning can be discerned.

In looking back over the early work I think I must add yet one more factor, somewhat intangible but very important. Our E.P.A. Contract has brought us into touch with the modular authorities of all the principal countries of western Europe, and we have become increasingly aware of the solidity of the movement towards modular co-ordination which is taking place at the same time in so many places, even though the different countries organize the work in different ways and have reached very different stages of advancement. The impression is inescapable that the case for modular co-ordination is widely accepted, if not entirely on proof or demonstration, then on the sheer weight of the "rationale," which emerges both from the negative feelings that something better than accidental co-ordination must be possible, and the accumulation of positive indications, some minor and some major, that more order is possible, is much to be desired and will become increasingly needed as time goes on.

This seems particularly so in Britain now. Look for a moment at this range of reference dimensions either proposed or already in use for modular design; there are grids of 33in, 36in, 39in, 40in, 48in, 50in, 76in and 99in, and quite likely I have missed out one or two. As a group they bear no kind of deliberate or systematic relation to one another, nor to any base module, yet some are growing strongly already and threaten to present themselves before long as blocks of entrenched assets and practices which, however good in themselves—and some carry the brightest flowerings of post-war British architecture—may nevertheless easily become an embarrassment to a well-ordered whole.

One can look at it another way. Consider a particular item of construction such as dry ceilings. As I see it, we are likely to want to use the same types in association with many kinds of construction, but in order to do this they must not only be able to work in with load-bearing wall construction, frame construction, curtain walls, and dry partition systems, and be able to accommodate standard light sources, and so on, but then the dry partitions in turn

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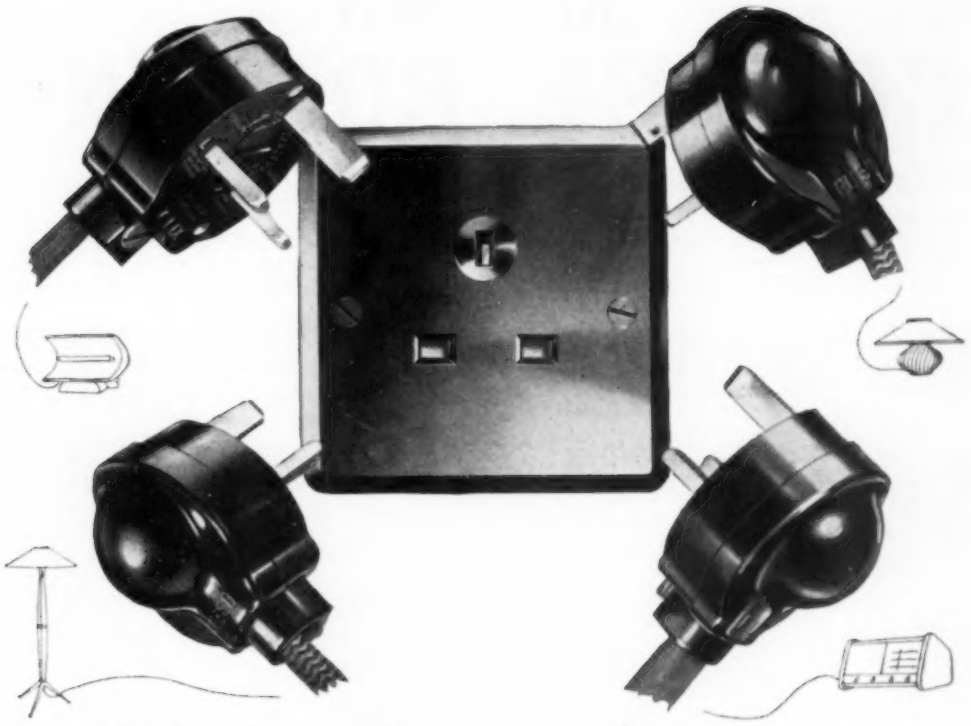

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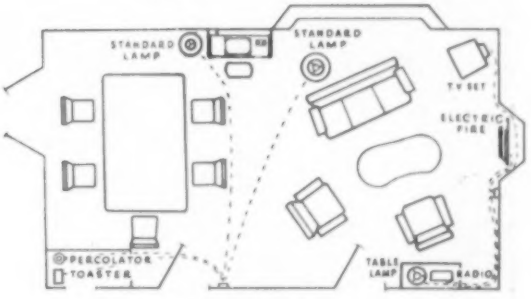

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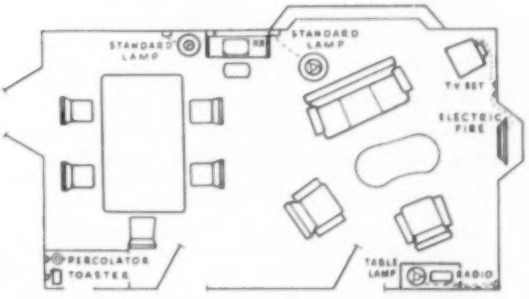

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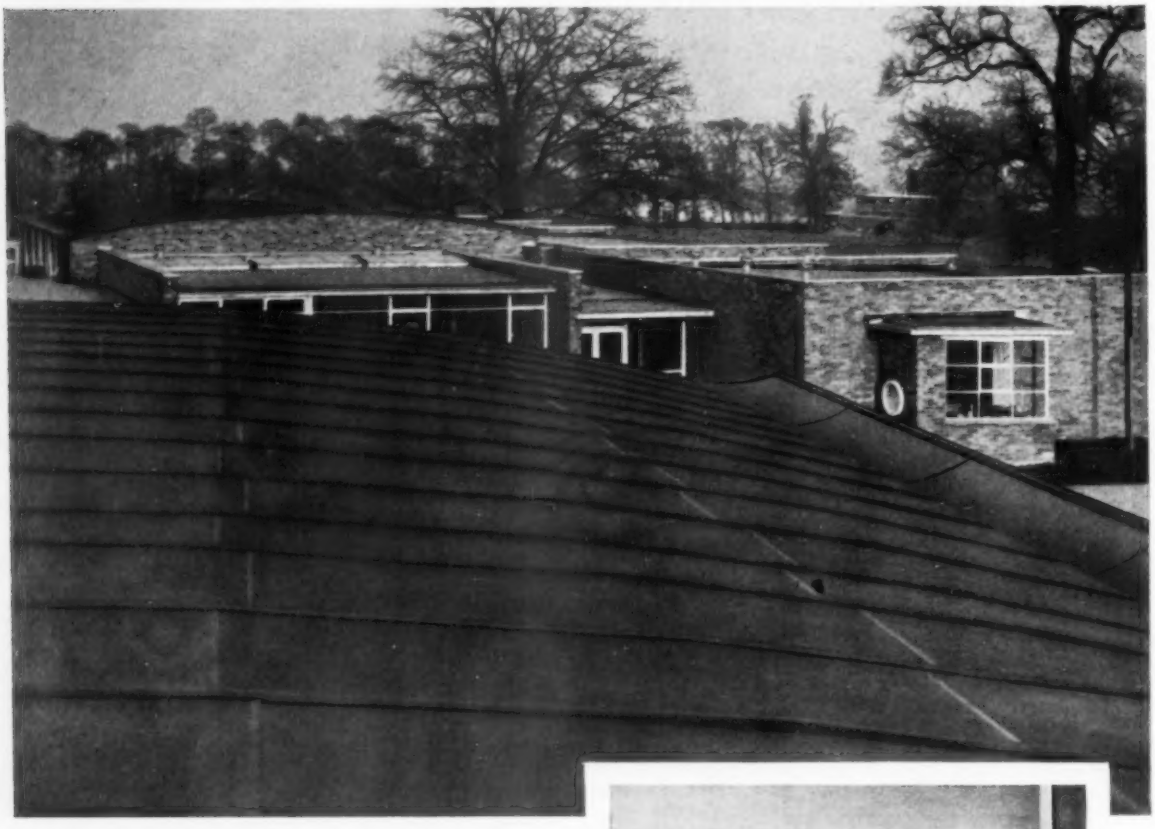

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must relate to plan grids for various classes of building, and the curtain walls must relate to windows and panel infillings, and so the chain of repercussions extends. There seems little hope of order here unless we can find a dimensional framework which can meet the varying circumstances of building, yet makes evident at all times a firm pattern of relationships. There is no proof yet that one dimensional framework can do all this, but it seems clear that we must at least seek a solution along these lines.

Modules, Planning Grids and Preferred Dimensions

Initially this problem is best considered in abstract by discussing modules rather than dimensions. As soon as we start dealing with feet and inches it becomes more difficult to keep our minds on the matters of principle which are our first concern.

So far as I know there has been no thorough study or publication of a side-by-side comparison of the operation of the various modular systems now in use. It seems to me such an obvious early step that it came as a surprise to me when I first realized it had never been done. Quite apart from the advantages of avoiding other people's difficulties, such studies help greatly to free one from prejudice and to keep a balanced view.

It is not an easy kind of study to make, of course. People who are operating modular systems do not yet seem to have provided critical reviews of the kind which science expects, and without them it is necessary to go and study their operation yourself—always a difficulty when it means another country, another language, a different set of building habits, and so on.

We have gone some way in this direction, and although I cannot take time for a detailed review of these studies, I would like to draw upon them for some general comments on the two or three main alternatives advocated or already in use.

The simplest concept no doubt is the idea of a single module with all of its multiples accepted as part of a "system." In principle it is much the same as Bemis's concept of structure composed of imaginary modular cubes.

I think there is probably general agreement now that to accept all multiples gives too much freedom and too little guidance to serve the major purposes of modular co-ordination, either for architects or manufacturers. The view has consequently grown up that a selection of preferred multiples should be established, but there is no definitive view yet of how this should be done.

Natural selection has been considered, or sometimes accepted without question. Our building industry is extremely varied, and left to its own free will it throws up dimensions in a virtual continuum over the whole range of product sizes—that is, up to about 10ft or so. Martin has made many reviews of existing dimensions in British Standards which show this, and even in single classes of products, such as doors, or blocks, dimensions occur at astonishingly small intervals over the whole range. To some useful extent, perhaps, there is a pattern running through them; foot intervals are emphasized, and 9in dimensions also to some extent. But there is not much hope here, so far as we can see, for the view that natural selection will exclude any useful number of multiples of any particular module.

It would be possible, of course, simply to say that some selection had to be made and to make it arbitrarily. This is not a very attractive line of approach, partly because it is so difficult to make a wise selection when there are so many conflicting claims as in our industry, and partly because if things are to fit together readily, their sizes and shapes clearly must have some rational relationship.

Earlier I described the German system and, of course, it is basically of the type which has a full sequence of multiples, though in fact it comprises two sequences side by side generating from separate modules.

It has evidently worked for some purposes, but in taking it as evidence one must remember several qualifications. First, it is used mainly for construction using bricks and blocks, for which the first few multiples are the ones chiefly needed; it has not been extensively used for combinations of larger units where the guidance of preferred dimensions is most likely to be wanted. Secondly, where it appears to have been most successfully used—in Schleswig-Holstein—they did in fact select preferred multiples, but for a strictly limited range of uses, mostly traditional domestic construction. And thirdly, the usefulness of the double sequence has not been fully appraised; we do not know if it was devised of necessity, or from logic, or for compromise, or as a convention.

M. le Corbusier's "Modulor" is quite a different kind of system, for there is no module in the ordinary sense of the word. He has two sequences of dimensions, like the Germans, each arranged so that each dimension is larger than its preceder by a constant ratio rather than by a fixed dimension. In other words, they are geometric. Of his two sequences, one has each of its dimensions twice as large as a corresponding dimension in the other sequence.

In setting up his pattern he used a geometric series where it also happens that each term is the sum of its two preceders. Many people know this as a Fibonacci arrangement, and it makes a rather unusual and useful kind of addition possible within the system. The second scale gives added flexibility in this respect when used together with the first. The ratio corresponds to that of the so-called "golden" section, which is one of the historically important bases of good proportions and the whole system has a strong æsthetic character. One of his key dimensions is taken from the human body, and through this and several other anthropometic dimensions in the sequence he obtains an automatic relation to human scale.

Criticisms of the system that seem to exist are these. There are rather considerable restrictions on the simple addition of equal-sized units to mesh to a larger size in the sequence. This is important. It is also the fact that the range of proportions is rather limited, and this seems likely to lead towards a narrower band of æsthetic possibilities than architects in general might be willing to accept. And the system as a whole seems to be less easy to comprehend and use than is necessary for a mechanism of this kind for our present purpose.

Although this review of systems is not comprehensive, I think it indicates the present position fairly well, and the feeling that it gives to us is that none of the approaches tried so far offers a ready-made answer to the problem of dimensional co-ordination for a building industry like ours. We accept it as the case, therefore, that we have to think for ourselves in this country.

If one were approaching this *de novo* in the light of the experience which now exists, it seems to us that one can postulate at least four conditions that a system should satisfy. Perhaps there will prove to be others, but here are the four as we have set down for the moment.

First—A full sequence of multiples up to about the first half-dozen is needed to cover bricks, blocks and other smallish units.

Second—Gaps in the sequence should enter at about that point and increase in size as the multiples themselves

Modular Co-ordination —the Evolving Pattern

increase. The intervals between 30 and 36 are clearly less necessary than those between 0 and 6, for example.

Third—It must be possible to add and combine the smaller numbers in very simple ways to equate to larger ones in the series. This is important if variety of use is to be made possible for products. We speak of this as the property of meshing.

(This principle can be stated in other ways. One could say, for instance, that the upper range of multiples should be numbers that factor readily; i.e., that divide readily into other whole-number dimensions. Yet another way is to say that the larger prime numbers, such as 7, 11, 13 and their multiples should be omitted because they cannot be made up from equal-sized units.)

Fourth—It must be possible to associate numbers in the sequence to give a wide range of proportions. An analogue might be said to be the well-tempered scale in music, modular in character, capable of wide musical expression, but itself æsthetically almost neutral.

If we could meet these conditions, we might conceivably have the outlines of a system that would deserve closer consideration. We have been examining the problem and while we cannot claim to have proposals that we have tested to our own satisfaction, one particular result holds our interest for the moment, at least. Perhaps it will survive.

I will not take time now to go through all the arguments of its development, but in principle what we did was to work on combinations of number series to see if certain merits which they possessed individually could be worked in together to advantage. The objective, broadly, might be described simply as a search for a way of deciding which multiples of a full sequence one should omit in order to leave the remainder with good rational relationships between them.

The most promising looking sequence resulted from a combination of an ordinary doubling series (1, 2, 4, 8, etc.) which gives the halvings and quarterings so commonly used in design, and a tripling series (1, 3, 9, 27), which gives the important thirdings, and a Fibonacci arrangement (1, 2, 3, 5, 8) which gives the unusual additive property I described earlier. The whole background was, of course, more complex than this, and these are perhaps sufficient reasons for the moment.

Perhaps this sounds less tidy than it works out to be, for in fact it resolved itself into the following simple table. The Fibonacci arrangement is a spine, as it were, with doublings to right and triplings to left.

Triples		Fib.	Doubles		
9	3	1	2	4	8
18	6	2	4	8	16
27	9	3	6	12	24
	15	5	10	20	
		8	16	32	

Terms beyond 32 are omitted as being needlessly large for the present.

The series one gets from the table can also be written down in sequence and emerges as follows:

1 2 3 4 5 6 . 8 9 10 . 12 . . 15 16 .
18 . 20 . . . 24 . . 27 . . . . 32 .

You will see readily that it meets my first two conditions—the presence of the first half dozen terms and the spreading of the larger terms. In fact it omits about half of the total. The third condition—the one about ease of adding and combining smaller terms to equate to larger terms is also met at frequent points on the ascending scale of numbers. You might make your own trials of this, but consider 12 as one example. It is on the table and can be made up from the following elementary combinations, also on the table: $10+2$, $9+3$, $8+4$ and $6+6$; or 4×3, 3×4, 6×2, 2×6; or $3+4+5$, $2+4+6$, and so on.

The fourth condition referred to aesthetic neutrality. The sequence incorporates 33 forms of proportions, including all that are of any historical importance except two, which seems to us perhaps less important than some of the others. Actually it is not in fact too difficult to do it by a roundabout method.

Now I must emphasize that this meeting of our conditions only merits our saying at this stage that it seems to be an arrangement that deserves further study. We might or might not be on a trail to our goal. Quite apart from the fact that we may not have postulated the right conditions to start with, the pattern has to be examined and tested in several important respects. We need to try it with modules of various sizes and see how it provides, for example, for dimensions that industry would find it hard or impossible to change. Its relation to problems of structural design, where "sub-modular" dimensions are likely to be very important, has not been looked at yet in any respect. The dualism of the doubling and tripling might prove to have difficulties we do not foresee at the moment. All these and other important questions must have satisfactory answers before the pattern could be consolidated as a definite proposal, and the testing might easily lead to changes, developments, or even to a quite different solution. I would like that to be very clear. Our reason for offering it for discussion at this early stage in the work is that this is a moment when many people are thinking about this aspect, and we would like the benefit of their views. The idea is therefore merely put forward now for others to be able to study and discuss as a possibility, and we will welcome constructive comment upon it.

There are one or two remarks I would like to make on points of detail. Anyone who examines it with dimensions in place of these numbers should try it with quite a wide range of module sizes, including some which are smaller than those most commonly considered. They are quite interesting. Also, since it is always possible that we might find it useful to consider two base modules rather than one, it is worth noting that the table seems to have possibilities of simplifying the merger. And finally, of course, let it be clearly understood that for any particular purpose one would expect to be selective in respect of the multiples chosen, and not expect all of them to relate to all kinds of construction.

It seems to us inevitable that careful study of this kind must precede formal advocacy of a complete modular system, for if it is established, it will be a major event in the history of building. Such a thing cannot be established or developed hastily, and there is no point in moving without the testing and study necessary to confirm its fitness for our purpose, because all the history of technical development teaches us that a system which fails to meet the demands made upon it will not survive.

* * *

Acknowledgments

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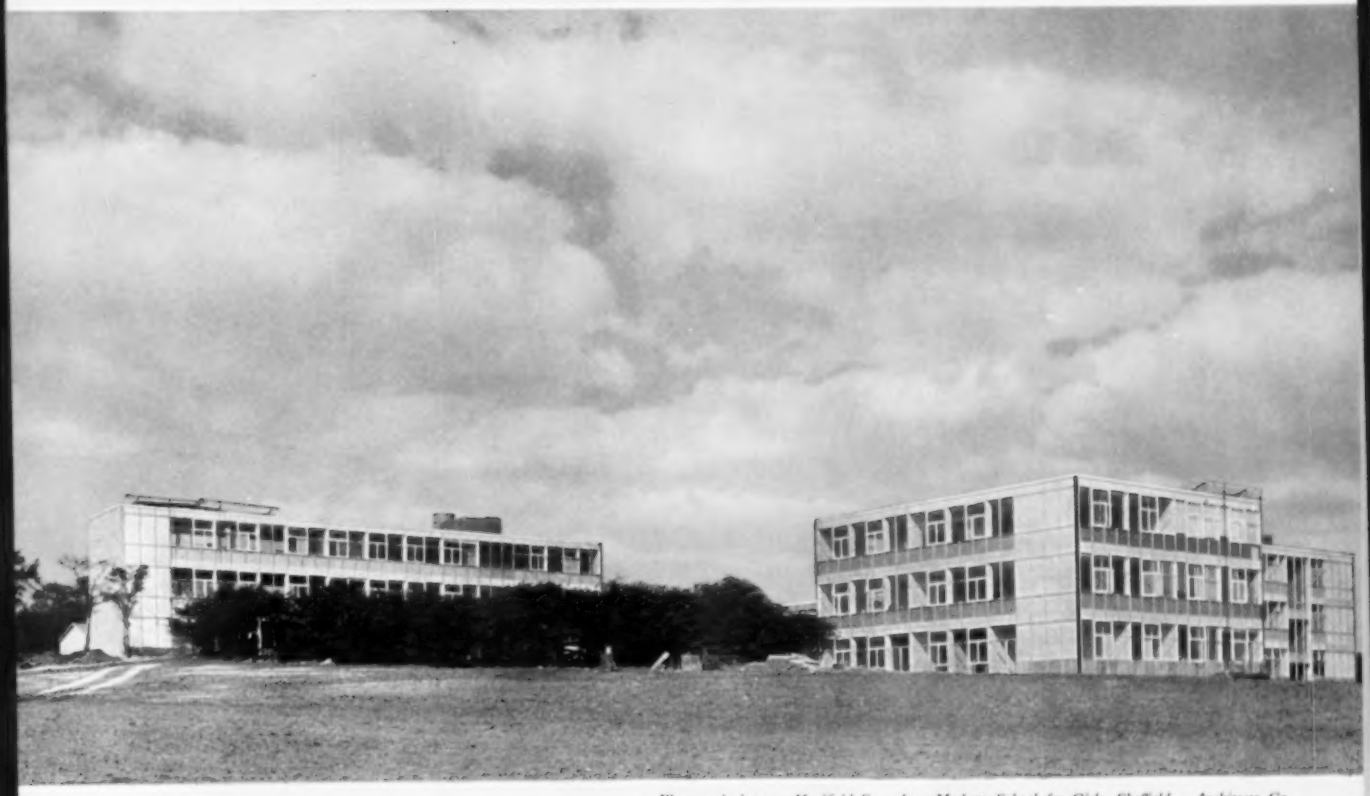
HILLS



Illustrated above :—Hurlfield Secondary Modern School for Girls, Sheffield. Architects Co-Partnership in collaboration with J. L. Womersley, A.R.I.B.A., A.M.T.P.I. City Architect.

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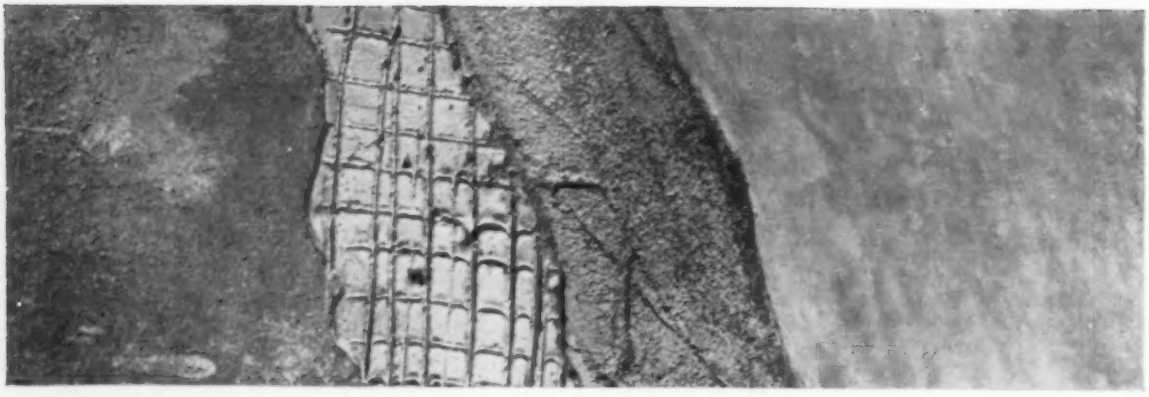

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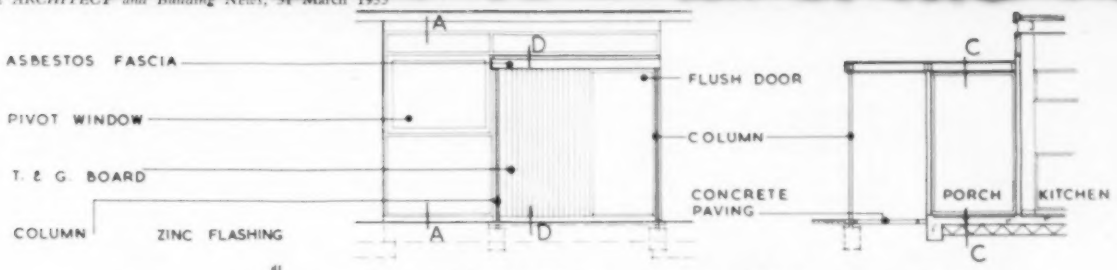
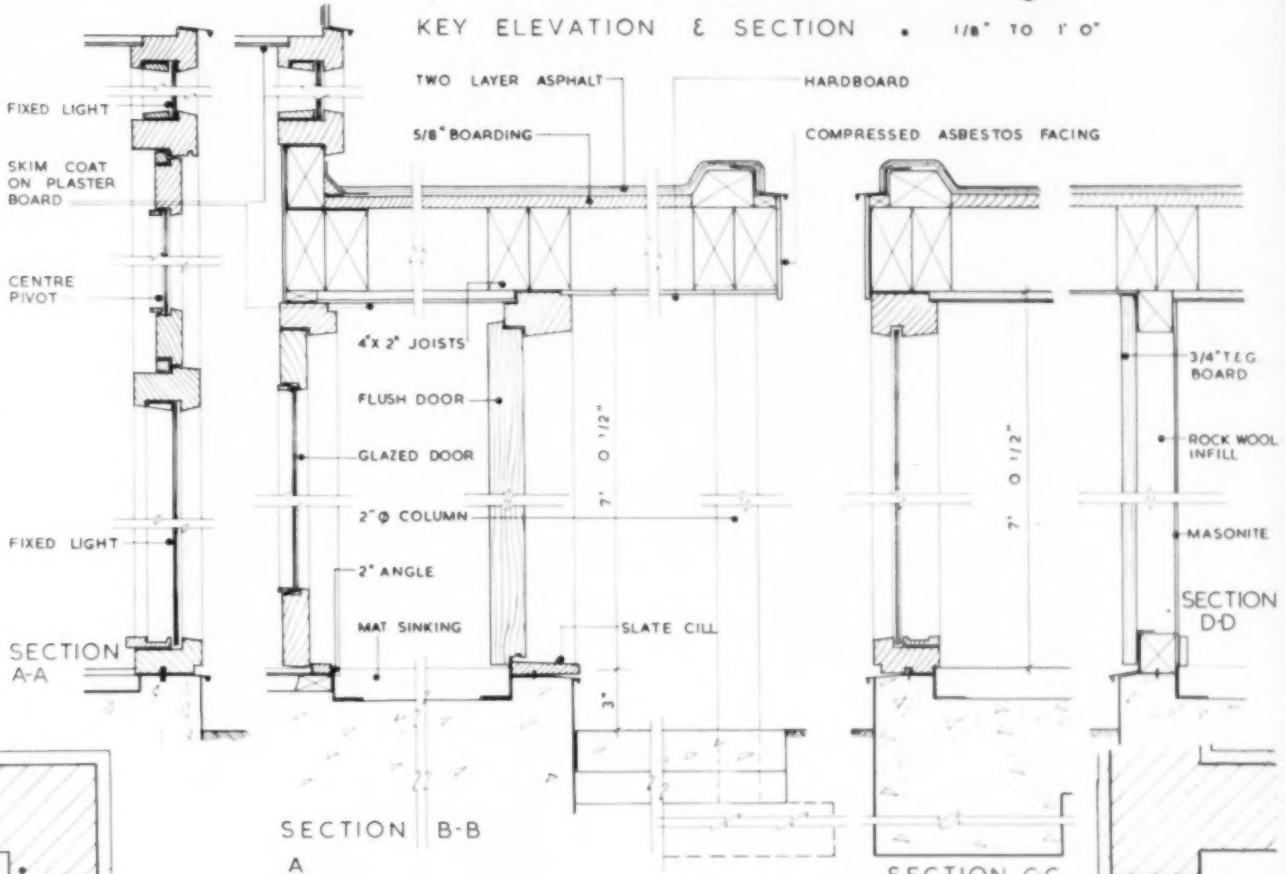


KEY ELEVATION & SECTION • 1/8" TO 1' 0"

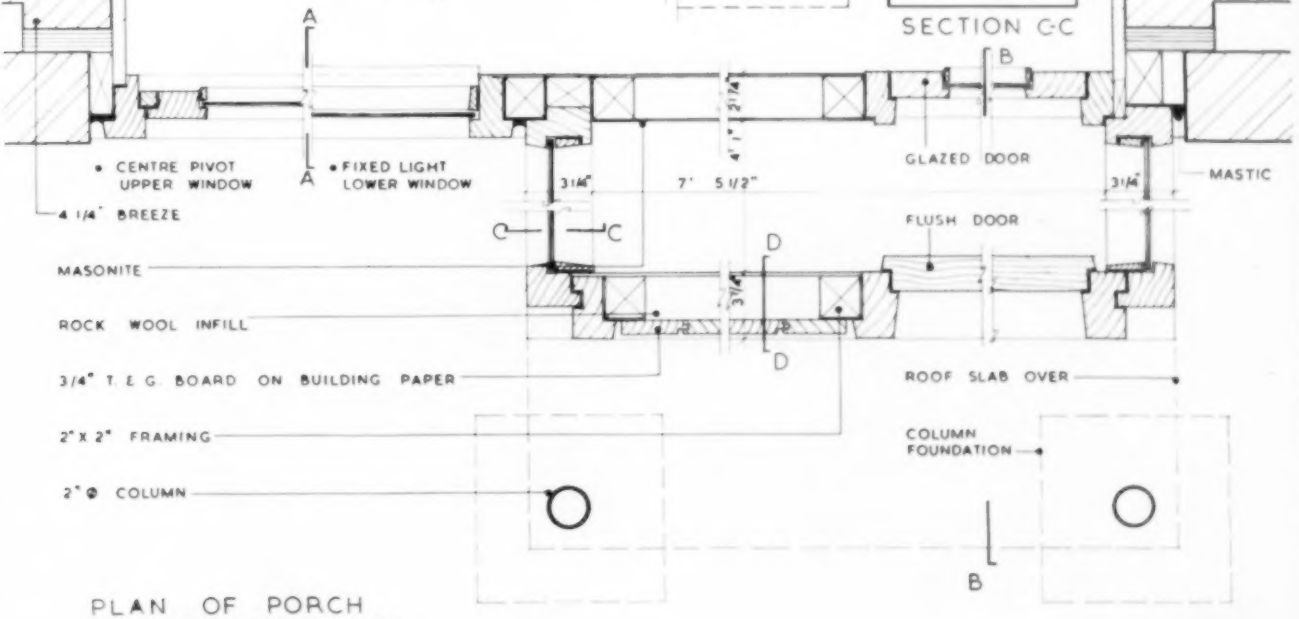


SECTION A-A

SECTION B-B

SECTION C-C

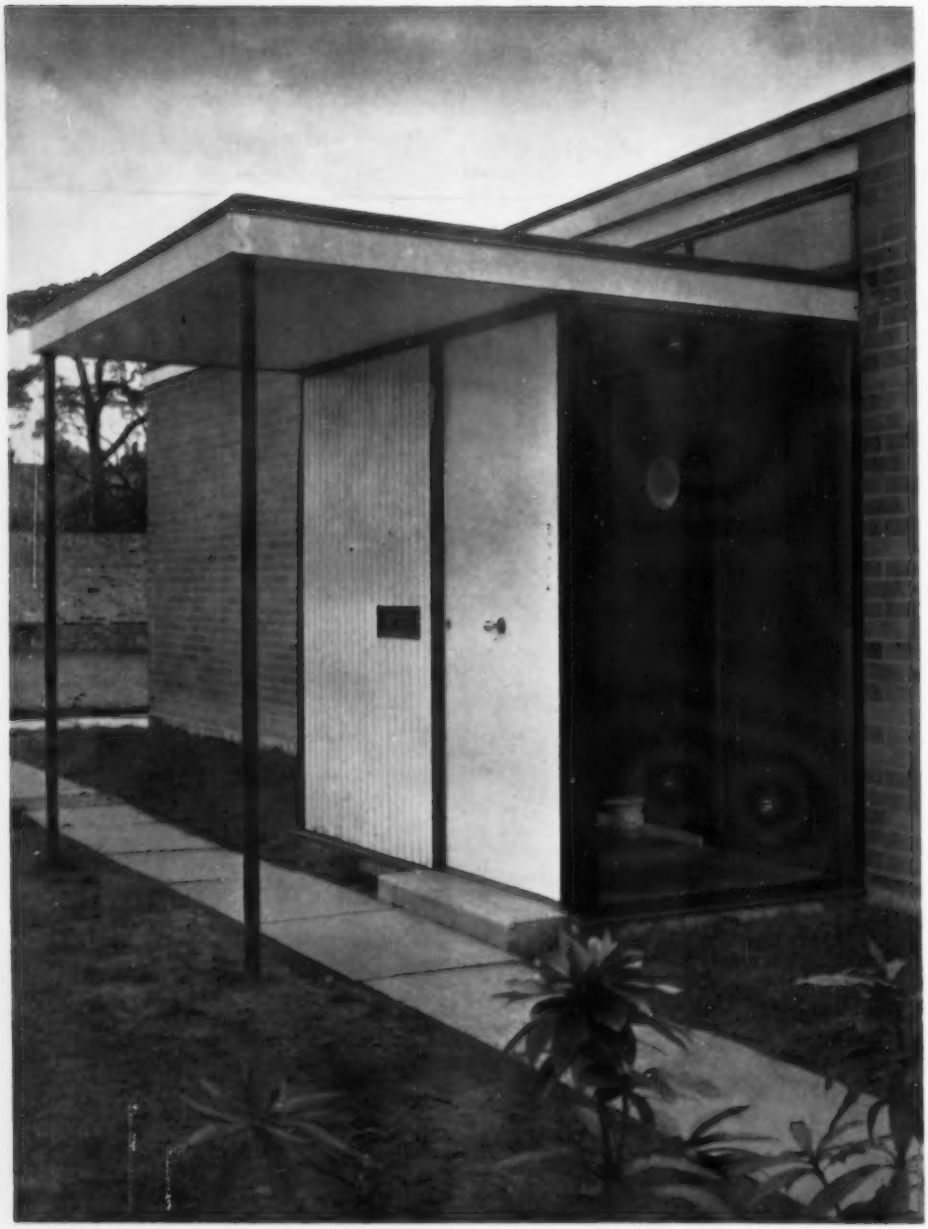
SECTION D-D



PLAN OF PORCH
• SCALE OF DETAILS 1/8 F.S.

PORCH. HOUSE AT HAM • JAMES CUBITT & PARTNERS

325 A



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ARCHITECTS: JAMES CUBITT & PARTNERS

CONTRACT • NEWS •

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

OPEN

BUILDING

AMESBURY R.C. (a) Construction of 8 offices and ancillary works, for extension of Redworth House. (b) Council's Engineer, Redworth House. (c) 2gns. (e) April 8.

• • •

AMPTHILL R.C. (a) Erection of stores, garages and roadworks at the Council Depot, Dunstable Street. (b) Council's Engineer, 12, Dunstable Street. (c) 2gns. (e) April 20.

• • •

ASHINGTON U.C. (a) 36 houses, Beamsley Terrace site; all trades. (b) Council's Engineer, Council Offices. (e) April 12.

• • •

BANSTEAD U.C. (a) 86 dwellings, Great Tattenhams and Shawley Way. (b) Council's Engineer, The Council House, Brighton Road. (c) 2gns. (e) May 2.

• • •

BOURNEMOUTH B.C. (a) 2 pairs of police houses, Baker Road, West Howe Estate. (b) Borough Architect, (Room 106) Town Hall. (c) 2gns. (e) April 23.

• • •

CHAILEY R.C. (a) 24 dwellings, South Street. (b) Council's Surveyor, Council Offices, Lewes House, Lewes. (c) 2gns. (e) April 23.

• • •

CHESTER R.C. (a) 22 houses and 6 flats, Upton. (b) C. R. Eaton, 16, White Friars. (c) 3gns. (e) April 11.

• • •

CLEVEDON U.C. (a) 20 houses, Clevedon. (b) Engineer and Surveyor, The Council House. (c) 2gns. (d) April 6.

• • •

DARTFORD B.C. (a) Erection of 3 identical blocks each containing 3 flats, 15 flats, 1 maisonette, 1 maisonette, and 2 maisonettes, Temple Hill Neighbourhood Unit. (b) Town Clerk, Town Clerk's Office, High Street. (c) 2gns. (e) April 18.

• • •

EBBW VALE U.C. (a) Erection of (1) 1 pair houses, Lower Beaufort Welfare Grounds; (2) 1 pair houses, Cwm Welfare Grounds. (b) Council's Architect, Council Offices. (c) 2gns cheque payable to Council. (e) April 9.

• • •

EIRE—CORK C.C. (a) Erection of hospital at Bantry. (b) J. R. Biyd Barrett, 5, Camden Place. (c) £50. (e) April 29.

• • •

EPSOM AND EWELL B.C. (a) 28 houses, Tonstall Road extension, off Hook Road, Epsom. (b) Borough Engineer, Town Hall, Epsom. (c) 3gns. (e) April 25.

• • •

HATFIELD R.C. (a) 72 houses and 17 garages, Redhall Farm site. (b) J. H. Parker, 82, Great North Road. (c) 5gns. (e) May 3.

• • •

HENLEY R.C. (a) 28 dwellings, Rokeby Drive, Mapledurham. (b) Council's Clerk, Easby House, Northfield End, Henley-on-Thames. (c) 2gns. (e) April 16.

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LOTHINGLAND R.C. (a) Erection of (1) 4 pairs of houses, Morton Crescent, Bradwell; (2) 4 pairs houses, Highfield Estate, Kessingland; (3) 1 block of 4 houses, Bonsey Gardens, Wrentham. (b) Council's Architect, Council Offices, Rectory Road, Lowestoft. (c) 2gns cheque. (e) April 18.

• • •

MELTON MOWBRAY U.C. (a) 117 houses on part of the Dorothy Avenue site. (b) P. B. Sutton, Egerton Lodge. (c) 2gns. (e) April 27.

• • •

MIDDLEWICH U.C. (a) 1 block of 5 houses, 2 blocks of 4 houses and 4 pairs of houses, Chadwick Fields Estate. (b) Council's Surveyor, Victoria Building, Lewin Street. (c) 3gns. (e) April 18.

• • •

NEWCASTLE REGIONAL HOSPITAL BOARD. (a) Proposed new radiological wing to the Newcastle General Hospital. (b) The Secretary, "Dunira," Osborne Road, Newcastle-upon-Tyne, 2. (d) April 7.

• • •

NEW SARUM C.C. (a) Construction of 1 block of 6 bungalows, communal rooms, outbuildings and certain site works in the grounds of St. Mark's House, Salisbury. (b) City Engineer, Council House, Bourne Hill, Salisbury. (c) 2gns. (e) April 11.

• • •

NEWTOWN AND LLANWCHAIARN U.C. (a) 16 houses, Cnal Road Playing Field site. (b) A. Stanley Hill, Community House, Newtown. (c) 3gns. (e) April 12.

• • •

N. IRELAND—LARNE R.C. (a) 12 dwellings and the carrying out of works at Parishagh, Glenarm. (b) Council Offices, Larne. (e) April 12.

• • •

N. IRELAND—NORTHERN IRELAND FIRE AUTHORITY. (a) Erection and completion of a Southern Divisional Headquarters and fire station, Thomas Street, Portadown. (b) The Secretary, 43, Castle Street, Lisburn, Co. Antrim. (c) 5gns. (e) April 15.

• • •

N. IRELAND—NORTHERN IRELAND HOUSING TRUST. (a) 31 dwellings, with engineering and ancillary works at Anne Street, Portaferry. (b) Northern Ireland Housing Trust, 12, Hope Street, Belfast. (c) £3. (e) April 13.

• • •

OXFORD C.C. (a) 3 pairs of houses, Minchery Farm Estate, Littlemore, Oxford. (b) City Architect, Town Hall. (d) April 2.

• • •

PETERBOROUGH COMBINED POLICE AUTHORITY. (a) Erection of proposed police headquarters, Bridge Street; approx. cost £55,000. (b) Authority's Surveyor, Town Hall. (c) 5gns. (d) April 7. (e) May 13.

• • •

PORTSMOUTH C.C. (a) 40 flats, Link Road, Wymering. (b) Messrs. A. E. Cogswell and Sons, Prudential Buildings, Commercial Road. (c) £1. (d) April 13.

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PORTSMOUTH C.C. (a) Erection of Kingston secondary school. (b) City Architect, 1, Western Parade. (c) £1. (d) April 20.

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SALTASH B.C. (a) Block of 8 flats, Grenfell Avenue site. (b) Borough Surveyor, Church House. (c) 2gns. (e) April 29.

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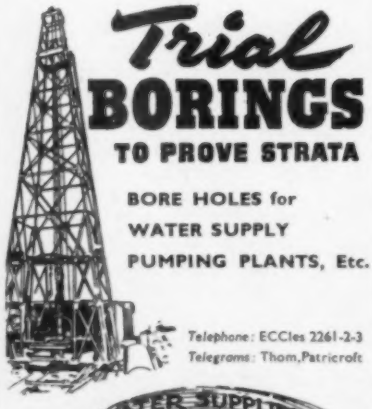

SCOTLAND — DUNFERMLINE C. AND R.B. (a) Erection of (1) 12 houses, Dundas Street, Townhill; (2) 2 houses, Main Street, Townhill; (3) 3 houses, Baldridgeburn; (4) 8 houses, Izatt Avenue; (5) 12 houses, Beck Crescent; all trades. (b) Messrs. C. R. Douglas and Co., 15, East Port, Dunfermline. (e) April 8.

• • •

STAFFORD R.C. (a) 50 dwellings, Gnosall, near Stafford. (b) Council's Clerk, Council Offices, 7, St. Mary's Grove. (e) April 18.

• • •

TUNBRIDGE WELLS R.B.C. (a) Contract No. 13. 16 dwellings, Sherwood Way, and 4 dwellings, Sherwood Road, Sherwood Estate. (b) Borough Surveyor, Town Hall. (c) 2gns.

• • •

VAYNOR AND PENDERYN R.C. (a) 32 houses and 8 bungalows in 2 blocks of 4 at Trefechan, near Merthyr Tydfil. (b) Ronald H. Rose, Council Offices, 25, Victoria Street. (c) 3gns. (e) April 18.

• • •

WANTAGE R.C. (a) 12 houses and 12 flats, Harwell. (b) Council's Surveyor, Council Offices, Belmont, Wantage. (c) 2gns. (e) April 23.

• • •

WEM R.C. (a) 30 houses, Manor Place, Prees Higher Heath. (b) Messrs. Hind and Brown, Hanley, Stoke-on-Trent. (c) 2gns. (e) April 13.

• • •

WEST SUSSEX C.C. (a) Erection of 4 classroom extension with ancillaries, in brick construction, at Greenway School, Horsham. (b) County Architect, County Hall, Chichester. (d) April 8.

• • •

WIDNES B.C. (a) Proposed alterations and additions to The Victoria Hall, Victoria Road. (b) H. Nevile Player, Brendan House, Widnes Road. (c) 5gn cheque payable to Corporation. (e) April 23.

• • •

YEOVIL B.C. (a) 18 brick houses and 6 brick bungalows, Sunningdale Estate. (b) Messrs. Petter, Warren and Roydon Cooper, The Old Oxford Inn, West Hendford. (c) 2gns. (d) April 4. (e) April 22.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

ST. PANCRAS B.C. (1) 216 flats. (2) Regent Square. (3) Tersons, Ltd., 4, Dollis Park, Finchley, N.3. (4) £497,887.

• • •

OXFORD CITY COUNCIL. (1) 243 "Easiform" houses. (2) Town Furze and Slade sites. (3) John Laing and Son, Ltd., London, N.W.7. (4) £345,618. (1) 36 flats. (2) North Way. (3) A. C. Carter (Oxford), Ltd., Oxford. (4) £60,275.

• • •

LONDON COUNTY COUNCIL. (1) Secondary School. (2) Avery Hill, Woolwich. (3) Gee, Walker and Slater, Ltd., 100, Park Lane, London, W.1. (4) £534,967. (1) Secondary School. (2) Peckham House site, Peckham, S.E. (3) W. J. Simms, Sons and Cooke, Ltd., 78, Mount Street, London, W.1. (4) £441,275.

LONDON, W.C. (1) Extensions for Odhams Press, Ltd. (2) Shelton Street, W.C.2. (3) A. Roberts and Co., Ltd., 79, Eccleston Square, London, S.W.1. (4) £190,000.

• • •

LONDON, W.C. (1) Office building. (2) Bedford Row, W.C.1. (3) Rowley Bros., Ltd., Dunloe Avenue, London, N.17. (4) £60,000.

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SCUNTHORPE B.C. (1) 150 houses. (2) Sunnyside, Church Farm and Riddings estates. (3) H. Boot and Sons, Ltd., Eccleshall Road, Sheffield.

• • •

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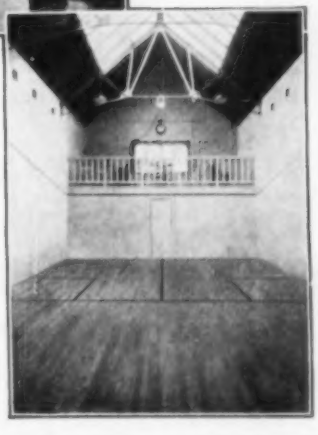

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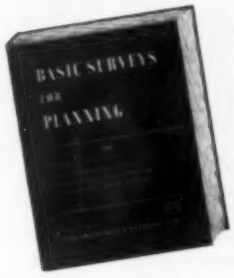

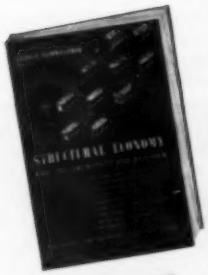

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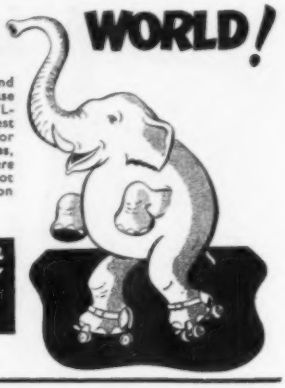

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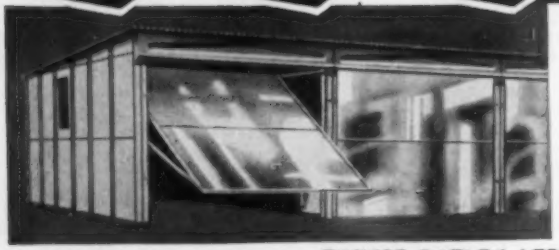

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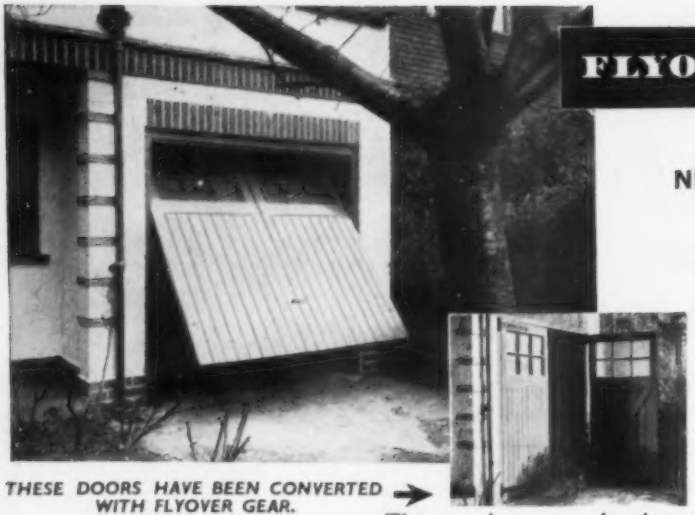

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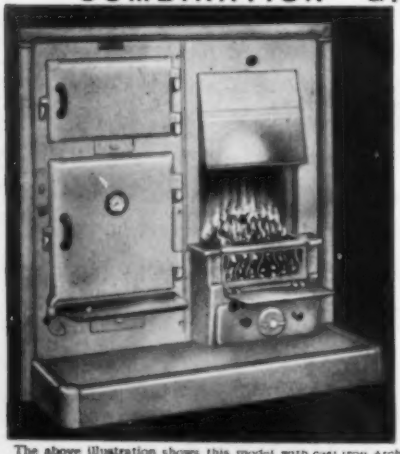

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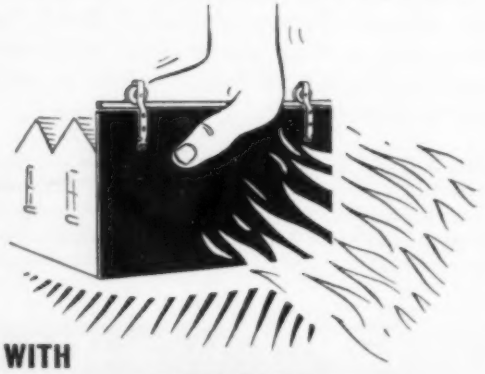

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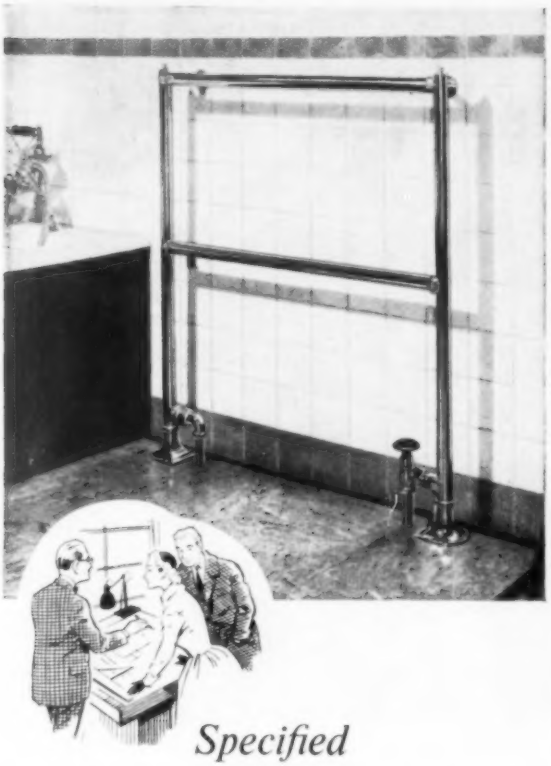

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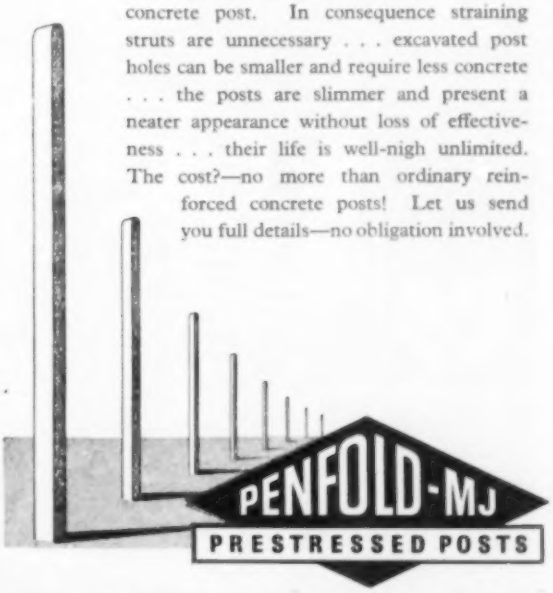

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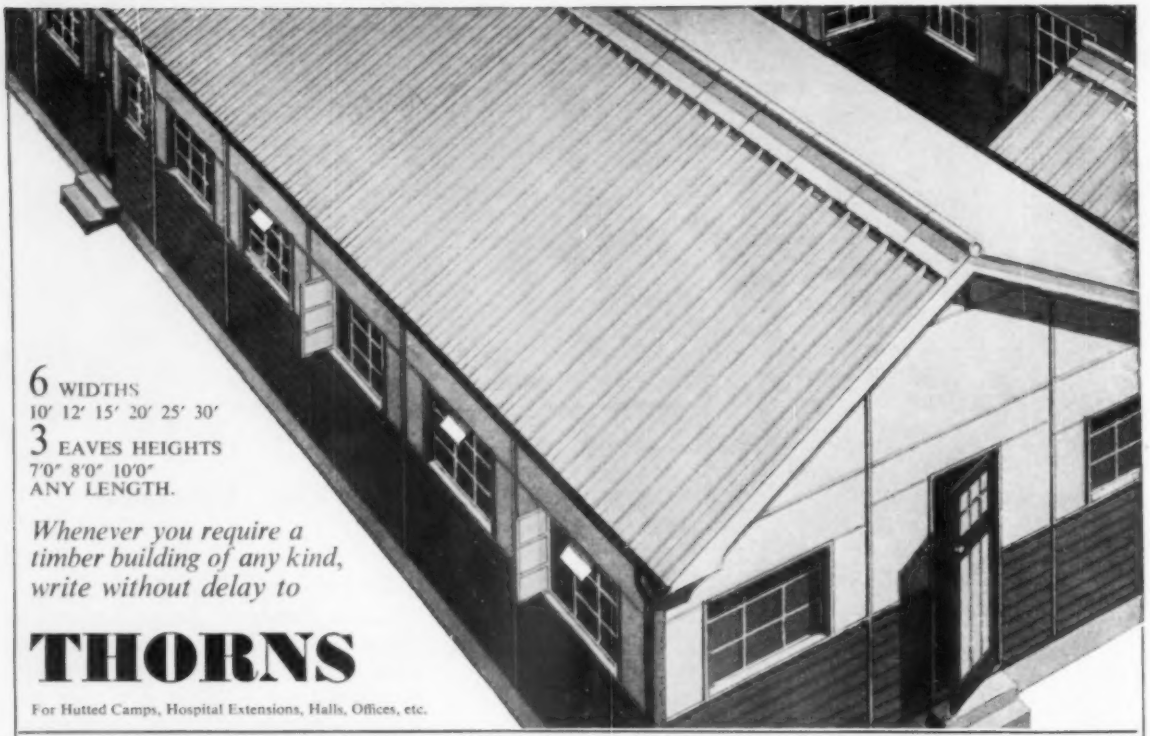

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THE UNIVERSITY OF LIVERPOOL.

APPLICATIONS are invited for the post of Lecturer and Studio Instructor in the School of Architecture. The initial salary will be within the range of £650-£1,000 per annum, according to qualifications and experience.

Candidates will be expected to have had several years of experience in practice, and preference will be given to those with special knowledge of construction and building science, or with interest in pursuing architectural research in these fields.

Applications, stating age, qualifications and experience, together with the names of three referees, should be received not later than April 19th, 1955, by the undersigned, from whom further particulars of the conditions of appointment may be obtained.

STANLEY DUMBELL,
Registrar.
March, 1955. [8931

MINISTRY OF WORKS

ARCHITECTURAL ASSISTANTS required for drawing offices in London, Edinburgh and various provincial offices.

Candidates must have had at least three years' architectural training, some experience in an architect's office, and be of Intermediate R.I.B.A. standard. London salary £442 to £695 per annum. Rates elsewhere slightly less. Starting pay according to age and experience. Prospects of promotion and permanency.

State age and full details of training and experience to E. Bedford, Esq., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, W.G.10/CA. 19(G), Abell House, John Islip Street, London, S.W.1. [8730

APPOINTMENTS—contd.

COUNTY BOROUGH OF WEST HAM.

BOROUGH ARCHITECT & PLANNING OFFICER'S DEPARTMENT.

ARCHITECTURAL APPOINTMENTS.

MEN of ability and enthusiasm required for:—

GROUP LEADERS,

SENIOR AND ASSISTANT ARCHITECTS,

for work on reconstruction schemes and schools at salaries within the range of A.P.T. Grades I-V (£500-£900) plus London Allowance. Grade to be determined according to qualifications and experience.

Further particulars and application forms (returnable by Monday, April 18, 1955) from Thomas E. North, Esq., O.B.E., F.R.I.B.A., Dist.T.P., Borough Architect & Planning Officer, 70, West Ham Lane, Stratford, E.15. [8935

LONDON ELECTRICITY BOARD.

SOUTH EASTERN SUB-AREA.

APPLICATIONS are invited for the following positions at Woolwich, S.E.18:—

ENGINEERING DRAUGHTSMEN.—Candidates should have had a good general and technical education and be experienced in one or more of the following subjects: drawing office routine, electrical diagrams, obtaining and recording all mains work and plant layout in transformer chambers.

The posts are graded under Schedule "D" of the National Joint Board agreement as Grade 6—£535 10s to £661 10s per annum, inclusive of London Allowance.

RECORDS DRAUGHTSMEN.—Candidates should have had drawing office experience and a good general education. Mains records experience an advantage. Salaries and conditions of service in accordance with National Joint Council agreement (Administrative and Clerical Grades) General Clerical Grade (Higher General Clerical Scale).

Application forms for both the foregoing vacancies obtainable from Personnel Officer, 46/7, New Broad St., London, E.C.2, to be returned completed by April 14th, 1955. Please enclose addressed envelope and quote ref.: V/1842/1140/AA. [8979

BOROUGH OF TOTTENHAM.

APPLICATIONS are invited for the established post of ARCHITECT—A.P.T. IV (£675 to £825 p.a. plus London Weighting). Candidates must possess final professional qualification. Application form and Conditions of Appointment from Borough Engineer (AB), Town Hall, N.15, to whom applications must be delivered not later than April 11, 1955. [8952

CITY OF LIVERPOOL.

ARCHITECTURAL & HOUSING DEPARTMENT.

APPLICATIONS are invited for the appointment of TECHNICAL ASSISTANT (PERSPECTIVE). Salary £560—£640 per annum (A.P.T. II). Applicants should have had experience in preparing perspective drawings, illustrating (preferably architectural subjects) in line and colour and the preparation of drawings for publicity purposes. Experience in lettering, setting out, etc., is also desirable. Applications will be considered from commercial artists, or persons with architectural training. Application forms, obtainable from the City Architect & Director of Housing, Blackburn Chambers, Dale Street, Liverpool, 2, must be returned to him not later than May 2nd, 1955.

The appointment is superannuable and subject to the Standing Orders of the City Council. Canvassing disqualifies.

THOMAS ALKER,
Town Clerk.
Municipal Buildings,
Liverpool, 2. (JA.3854.)
March, 1955. [8950

APPOINTMENTS—contd.

CONTEMPORARY approach required from Assistant about Inter. Standard for interesting work in new office in South East London. Opportunity to work on prefabrication techniques. Good salary and working conditions.—Write full details of experience, etc., to Box 2822, c/o "A. & B.N." [8951

THE Department of Health for Scotland. Chief Architect's Office. Applications are invited for non-pensionable posts of Assistant Architect. Headquarters Edinburgh. Age 25-34. Salary range £660—£1,015 (Women £905). Duties include housing, school building (including research and development), health buildings, etc.

Further particulars and application form from Establishment Officer, Department of Health for Scotland (Room 30), St. Andrew's House, Edinburgh, 1. Closing date for applications April 21, 1955. [8953

AYCLIFFE DEVELOPMENT CORPORATION.

ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited for this appointment at a salary in accordance with Grade A.P.T. III (£600×£25—£725 p.a.).

Appointment subject to N.J.C. Conditions, Superannuation and medical examination.

Housing accommodation if required.

Preference given to applicants who have passed the R.I.B.A. Intermediate Examination.

Applications stating age, qualifications and experience together with names of two referees to arrive not later than Saturday, April 16th, 1955.

(Sgd.) A. V. WILLIAMS,
General Manager.
Newton Aycliffe,
Co. Durham. [8980

THE Department of Health for Scotland. Chief Architect's Office. Applications are invited from Architectural Draughtsmen with considerable office experience for a non-pensionable post. Duties include assisting architects on Housing projects, Health Buildings and Schools.

Salary range £432—£680 (Women £600), with placing according to age and experience. Form of application, obtainable from Establishment Officer, Department of Health for Scotland (Room 30), St. Andrew's House, Edinburgh, 1, must be returned by April 21, 1955. [8955

LLANDUDNO URBAN DISTRICT COUNCIL.

PROVISION AND ERECTION OF HAPPY VALLEY CAFE BUILDING.

THE Council invite TENDERS from manufacturers of prefabricated buildings for the SUPPLY, DELIVERY and ERECTION of a CAFE BUILDING approximately 680 square feet in floor area. An outline design and full particulars may be obtained on application to the undersigned.

Tenders to be received not later than MONDAY April 18th, 1955.

The Council do not bind themselves to accept the lowest or any Tender.

J. A. EDWARDS,
B.Eng., A.M.I.C.E.,
Engineer and Surveyor.
Town Hall,
Llandudno.
March 16th, 1955. [8992

UNIVERSITY OF CAMBRIDGE. Assistant Lectureship in the Faculty of Fine Arts. Applicants for the post should be prepared to lecture on some aspect of the Fine Arts. Particulars may be obtained from P. Bicknell, M.A., 1, Scroope Terrace, Cambridge. Latest date for applications: Saturday, April 30. [8957

APPOINTMENTS—contd.

HEMEL HEMPSTEAD DEVELOPMENT CORPORATION.

APPOINTMENT OF SENIOR ARCHITECT.

APPLICATIONS are invited from Associates of the R.I.B.A. for an appointment in the department of the Chief Architect (H. Kellett Ablett, F.R.I.B.A., M.T.P.I.). Applicants should have experience in commercial and domestic architecture.

Salary scale £715—£975 p.a. Conditions of service broadly similar to those in Local Government.

Contributory superannuation, with opportunity of entering or continuing in Local Government Superannuation Fund.

It may be possible to provide housing.

Application forms from this office (please quote Vacancy No. 176c) to be completed and returned to undersigned by April 14.

W. O. HART,
General Manager.

Westbrook Hay,
Hemel Hempstead,
Herts. [8961

COUNTY BOROUGH OF ST. HELENS.

APPLICATIONS are invited for the appointment of TWO SENIOR ARCHITECTURAL ASSISTANTS in the Borough Engineer's Department within the new A.P.T. Grade IV (£675—£825), commencing salary according to qualifications and experience.

Applicants should be Registered Architects, preferably holding a recognised architectural qualification.

Housing accommodation will be made available if required by the successful candidates.

The appointment will be terminable by one month's notice and will be subject to the Local Government Superannuation Acts and medical examination and N.J.C. service conditions.

Candidates must, when making application, disclose in writing whether to their knowledge they are related to any member of the Council or to a holder of any senior office under the Council.

Applications stating age, qualifications, present and past appointments and details of experience accompanied by copies of three recent testimonials must be forwarded to M. Ward, M.I.Mun.E., A.M.T.P.I., Borough Engineer, not later than Monday, April 25, 1955.

Canvassing in any form will be deemed a disqualification.

Town Hall,
St. Helens. [8974

LANCASHIRE COUNTY COUNCIL.

PRINCIPAL ASSISTANT ARCHITECT, £1,307 10s × £52 10s—£1,517 10s. Duties: Helping Assistant County Architect with the administration of the General Branch which has a staff of 25 architects and deals with all work except Education; occasional attendance at Committee meetings and supervision of design in the drawing office. The latter is a most important duty and requires a flair for design much above the average. There is a large and interesting programme of work including Police Stations and Courts, Fire Stations, Hostels for the Aged, Clinics, etc. Application forms, from the County Architect, P.O. Box No. 26, Preston, to be returned by Monday, April 18, 1955, quoting Ref. A/ABN. [8949

THE Stewartry of Kirkcudbright County Council requires:—

(i) Assistant Architect (Salary £695 to £815). Must be registered architect and have had thorough training and experience in architectural design, construction of modern school buildings, houses and other local authority works.

(ii) Architectural Assistants (Salary £515 to £630 or £615 to £715 according to qualifications and experience). Must have had thorough training in architectural design and preferably experience in the construction of modern school buildings and other local authority works.

Apply giving age, qualifications, appointments held, and two referees to County Clerk, County Offices, Kirkcudbright, by April 8th, 1955. [8982

BOROUGH OF WATFORD.

ASSISTANT ARCHITECT.

APPLICATIONS are invited for the appointment of an Assistant Architect on Grade II A.P.T. (£560—£640 p.a.). Commencing salary will be fixed according to experience.

Housing accommodation will be provided if required by the successful applicant.

Application forms, obtainable from the undersigned, are to be returned by April 7.

F. C. SAGE,
Borough Engineer, Surveyor & Architect.
Town Hall,
Watford. [8948

APPOINTMENTS—contd.

COUNTY BOROUGH OF GREAT YARMOUTH.

SCHOOLS ARCHITECT'S DEPARTMENT.

APPLICATIONS are invited from Associate Members of the R.I.B.A. to fill the vacancy for a SENIOR ASSISTANT ARCHITECT, within A.P.T. Grade IV (Amended) (£675—£825).

Candidates should have a knowledge of modern school design and construction.

Housing accommodation will be made available if required.

Applications, stating age, qualifications, experience and giving details of present and past appointments, together with the names of two referees, should reach the Schools Architect, 22, Euston Road, Great Yarmouth, by April 9, 1955.

D. G. FARROW,
Chief Education Officer.

22, Euston Road,
Great Yarmouth. [8954

COUNTY BOROUGH OF EAST HAM.

TEMPORARY BUILDING INSPECTOR—GRADE II—£560-640.

LONDON Weighting is paid in addition. Salary in excess of the minimum may be paid according to qualifications and experience.

A subsistence allowance may be granted over a reasonable period to the person appointed if unable to obtain suitable housing accommodation, necessitating the maintenance of two homes.

Further details and application forms, returnable by April 15th, 1955, from the Town Clerk, Town Hall, East Ham, E.6. [8985

COUNTY BOROUGH OF DUDLEY.

(a) ASSISTANT ARCHITECT, GRADE IV (£675-£825).

(b) ASSISTANT ARCHITECT, SPECIAL GRADE (£650-£775).

APPLICATIONS are invited for the above appointments on the Staff of the Borough Architect.

Applications for both appointments shoud be Associate members of the Royal Institute of British Architects.

Applications, together with copies of not less than two recent testimonials, to reach me by Thursday, April 14th, 1955.

P. D. WADSWORTH,
Town Clerk.

The Council House,
Dudley.
March 25th, 1955. [8986

CITY OF BIRMINGHAM.

CITY ARCHITECT'S DEPARTMENT.

APPLICATIONS are invited for the appointment of a Senior Assistant Architect as Group Leader in the General Architectural Section, which is responsible for a large and varied programme, including the design and erection of large public buildings, such as police and fire stations, office blocks, baths and other civic buildings. The appointment will be within Grade A.P.T. VI (£825—£1,000 per annum) at a commencing salary according to experience.

Applicants must be Associate Members of the R.I.B.A., or hold an equivalent qualification, and must have a contemporary outlook in architectural design.

The post is permanent, superannuable, subject to a medical examination and to one month's notice on either side.

Applications, stating age, present position and salary qualifications and experience, together with the names of two persons to whom reference can be made, should reach the undersigned not later than April 13, 1955.

Canvassing disqualifies.

A. G. SHEPPARD FIDLER,
City Architect.
Civic Centre, Birmingham, 1. [8956

TENDERS

COUNTY BOROUGH OF BRIGHTON.

TENDERS are invited for:

THE ERECTION OF ONE BLOCK OF 6 GARAGES AND 3 MAISONETTES AT SYLVAN HALL ESTATE.

Bills of Quantities and forms of tender may be obtained from the Borough Engineer and Surveyor, 26/30, Kings Road, Brighton, on or after Friday, April 1, on receipt of a returnable deposit of £2 2s.

Tenders are to be delivered to the Town Clerk in plain sealed envelopes not later than 12 noon, Saturday, April 30, 1955.

W. O. DODD,
Town Clerk.
[8971

MISCELLANEOUS SECTION

RATE: 1/6d. per line, minimum 3/-, average line 6 words. Each paragraph charged separately.

BOX NOS. add 2 words plus 1/- for registration and forwarding replies which should be addressed c/o, "The Architect & Building News," Dorset House, Stamford Street, London, S.E.1.

PRESS DAY Monday. Remittances payable to Iliffe & Sons Ltd., Dorset House, Stamford Street, London, S.E.1.

No responsibility accepted for errors.

ARCHITECTURAL APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order, 1952.

ASSISTS., Inter. and Final standard; salary according to ability; office exp. essential.—Tel. Amb. 7271. [8943

JUNIOR Assistant required by small City office. —Write, giving full details and salary required, Box 2898, c/o A. & B.N. [8977

MINOPRIO & SPENCELY & P. W. MACFARLANE need experienced Architectural Assistant, salary £750 to £850, for London office.—Write 18, Seymour Street, W.1. [8959

ADAMS, HOLDEN & PEARSON require senior and junior architectural assistants immediately. —Write, giving particulars of experience and salary required, to 38, Gordon Square, W.C.1. [8901

ARCHITECT'S Assistants required (1 senior and 2 juniors) for West End office.—Write stating full particulars and salary required to Box 2085, c/o A. & B.N. [8819

ARCHITECTS' CO-PARTNERSHIP require qualified Assistant. Salary according to experience. The office is doing work in U.K. and West Africa.—Write to 44, Charlotte St., W.1. [8981

WESTWOOD, SONS & HARRISON, F/F.R.I.B.A., require a senior architectural assistant, A.R.I.B.A. standard, with office experience.—Apply in writing to 46, Baker St., W.1. [8964

ARCHITECTURAL Assistants urgently required up to Intermediate Standard and preferably with office experience. State salary required.—Fowler, Grove & Haggar, 140, Lodge Rd., Southampton. [8984

ASSISTANT (male) required immediately, Final Standard with at least four years' office experience. Salary approx. £650.—Apply, Messrs. Walters & Kerr Bate, 14, Gray's Inn Square, London, W.C.1. Tel. Holborn 9850. [8972

RESPONSIBLE Senior Assistant required with good practical experience of high quality work, by small London office.—Write, stating practical experience, qualifications—if any, age, and salary required, Box 2897, c/o A. & B.N. [8976

JAMES M. MONRO & SON require Senior and Junior Architectural Assistants for their London, Watford and Birmingham offices. Varied and interesting commercial and industrial work offered. —Write, giving full particulars, to 32, Clarendon Road, Watford, Herts. [8969

ARCHITECTURAL Assistants required, varied work, salaries £700 to £750; write, stating age, training, experience, present salary; all interview expenses paid.—G. de C. Fraser Son, & Gearey, Chartered Architects, 27, Dale St., Liverpool. [8989

ARCHITECTURAL Assistant (Inter. to Final Standard) urgently required in Tunbridge Wells Architects' office engaged in school and hospital work. Write, stating full particulars and salary required to Box 2839, c/o A. & B.N. [8960

ELIE MAYORCAS requires immediately qualified architectural assistant, with some office experience, for interesting contemporary projects; salary up to £600 per annum, according to ability. —Apply in writing, giving details, to 13, David Mews, Baker St., W.1. [8965

ARCHITECTURAL Assistant, up to Final Standard, required for design work on large power station and industrial buildings. Salary according to experience.—Apply Sir William Halcrow & Partners, MM.I.C.E. (Architectural Department), Stanhope House, 47, Park Lane, London, W.1. [8973

ARCHITECTURAL APPOINTMENTS VACANT—contd.

ARCHITECTS require Senior Assistants and Building Surveyors for industrial work in the Newcastle and London areas. Experience in site supervision desirable. Pension scheme.—Particulars and qualifications and salary required to Ley, Colbeck & Partners, F/F.R.I.B.A., Chartered Architects, 51, Bishopsgate, London, E.C.2. [8983

FARMER & DARK urgently require Assistants of all grades to work on a wide variety of new large scale industrial schemes. 5-day week. Non-contributory pension scheme. In applying please state experience fully and salary required.—Farmer & Dark, Romney House, Tufton St., Westminster, S.W.1. [8921

ARCHITECTURAL assistant required to work upon the preparation of working drawings and details for large scale contemporary projects; experience and high standard of draughtsmanship essential.—Apply, giving age, qualifications and experience, to David du R. Aberdeen, 19, Southampton Place, W.C.1. [8966

ARCHITECTURAL Assistant required of Junior or Final R.I.B.A. standard; must be first-class draughtsman, able to take charge of jobs if necessary; full knowledge of details and specifications important; varied and busy practice in country area.—Reply, stating salary required and when free, to T. R. Bateman, A.R.I.B.A., 21, Vine St., Evesham. [8922

THE Metropolitan Borough of Hampstead require a Junior Architectural Assistant. Salary higher general division (at age 18 years £230 rising to maximum of £475 plus London weighting). Medical examination. No housing provided. Applications, giving three referees, to the Town Clerk, Town Hall, Haverstock Hill, N.W.3. Closing date April 15, 1955. [8958

ARCHITECTURAL Assistant is required at Lowestoft Branch Office; must be keen and capable of preparing sketch designs and working details of contemporary domestic and public buildings. A furnished flat is available. Write in first instance to Skipper and Partners, 66, Prince of Wales Rd., Norwich, stating qualifications, experience and salary required. [8987

W. H. WATKINS, GRAY, FF.R.I.B.A., & PARTNERS, require Architectural Assistants of Intermediate standard for Bristol office; applicants should preferably have passed R.I.B.A. Intermediate and be studying for Final; must be good draughtsmen and have good practical experience; contributory pension scheme in operation.—Apply in writing, giving age, experience and salary required, to 1, Clare St., Bristol, 1. [8942

ARCHITECTURAL assistants required by B.B.C. in London for work on design of studios, transmitter and office premises; candidates should be up to Intermediate or Final R.I.B.A. standard and have had some design office experience; salary in scales £545 to £755 or £645 to £880 according to qualifications and experience.—Requests for application forms to Engineering Establishment Officer, Broadcasting House, London, W.1, within 7 days quoting ref. EX.27, A.B.N. [8917

ASSISTANT Quantity Surveyor required for Property Department of Lanark County Council at Motherwell; J.I.C. salary scale as at May 16, 1955, A.P.T. Grade VIII (£840-£915); must have passed Final Examination of R.I.C.S. and have had practical experience in the preparation of estimates and schedules of quantities, measuring up and checking of final accounts of all trades; superannuation; medical examination; no canvassing.—Applications, stating age, qualifications and experience, together with names and addresses of three referees, to be lodged with the County Clerk, P.O. Box No. 1, Glasgow, not later than April 9, 1955. [8939

ARCHITECTURAL APPOINTMENTS VACANT—contd.

ARCHITECTURAL Assistant required by the Nyasaland Government P.W.D. on contract for one tour of 24-36 months. Salary (including present temporary allowance of approx. 13% of salary) £1,018 a year. Gratuity of 10% of total basic salary drawn during contract. Outfit allowance £30. Free passages. Liberal leave on full salary. Candidates under 35 years of age, must have at least five years' all-round experience in an architect's office and have a sound knowledge of construction with ability to prepare working drawings and specifications from architects' designs.—Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience, and quote M2B/40715/AF. [8975

SITUATIONS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order, 1952.

LONDON Architect requires competent Draughtsman (public buildings).—Box 2934, c/o A. & B.N. [8993

ASSISTANT required in busy practice in West End, in early '20s, about Intermediate R.I.B.A. standard; excellent opportunities of gaining all-round experience.—Box 0672, c/o A. & B.N. [0636

SENIOR Quantity Surveyor required by Building Contractors with expanding business in N.W. London.—Write in confidence, stating experience, age, salary required, Box 2899, c/o A. & B.N. [8991

JUNIOR Draughtsmen required for reinforced concrete work involving all types of structure; previous experience of reinforced concrete work not essential; five-day week.—Apply "Twisteel" Reinforcement, Ltd., Alma St., Smethwick, Staffs. [8944

MAINTENANCE Supervisor required for group of West End Hotels, interesting and varied work covering maintenance, improvement schemes and construction; excellent prospects and good remuneration for the right applicant.—Write stating experience to F. Kobler, Washington Hotel, Curzon St., W.1. [8947

ARCHITECTURAL assistants required in the office of the Architect, Eastern Region, British Railways, King's Cross; (a) salary range £780/£815 (2 positions), (b) salary range £660/£750 (2 positions); applicants for (a) should be qualified with some years' practical experience and for (b) should be qualified or should have passed Inter-R.I.B.A. with some years' practical experience.—Apply in writing giving particulars as to age, qualifications (if any) and practical experience to Chief Civil Engineer, British Railways, King's Cross, London, N.1. [8967

COURSES for all R.I.B.A. EXAMS

Postal tuition in History, Testimonies, Design, Calculations, Materials, Construction, Structures, Hygiene, Specifications, Professional Practice, etc. Also in general educational subjects.

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Phone: KEN. 4477 and at Worcester

SITUATIONS VACANT—contd.

ARCHITECT, or experienced Assistant, required by "The Architects' Journal" Ability to write fluently and well and a sound knowledge of construction and contemporary building technique essential. Will be expected to write reports on buildings, supervise the production of technical architectural drawings, commission and sub-edit technical articles and assist production.—Please apply to The Editor, "The Architects' Journal," 9, Queen Anne's Gate, S.W.1. [8978

QUALIFIED Surveyor or Architect required as a Technical Assistant in the Estate Branch of a leading Oil Company in the London area. Administrative experience is essential and applicants will be required to control and co-ordinate work of technical and non-technical staff. They should also be capable of assuming responsibility for the management, maintenance and furnishing of large office buildings and have originality of thought and imagination on design and function of the modern office. Age—under 30 years, good pension scheme, salary according to age and experience.—Write, stating age and full details of experience and qualifications, quoting H.3324, to Box 7439, c/o 191, Gresham House, E.C.2. [8988

SERVICES OFFERED

TWO qualified architects each with eight years' varied experience are prepared to undertake part-time work for architects in London or Surrey areas.—Box 2850, c/o A. & B.N. [8962

FOR SALE

JOINTLESS composition flooring in attractive colour range—quotations free.—Full particulars from the Liotex Asbestos Flooring Co., Ltd., 3, Corbetts Passage, London, S.E.16 (Dept. A). Bermondsey 4341-2-3. [0622

ALL hardwood mouldings, plain and embossed, embossed ornaments and dowels; send for catalogue and to-day's lowest trade prices.—Dareve's Moulding Mills, Ltd., 60, Pownall Road, Dalston, E.8. Clissold 1543/4. [0142

NEW Cast-iron Gutters and Pipes in stock at stores, Hanwell, London, W.7. Moulded, O.G., H.Rd., Box, Boundary Wall, Valley Gutters made from 4in to 30in wide, R.W. Pipes, 2, 2½, 3, 3½, 4 and 6in.—Hills Bros. (Est. 1932), 49, Queen Victoria St., London, E.C.4. (City 3094.) [8990

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IF IT'S SCAFFOLD FITTINGS WE HAVE THEM.
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ALSO 125,000 S/H ft of Alloy Tubular Scaffolding, random lengths.
All material is in first-class condition and can be supplied from stock and inspected.
Contact C. Evans & Sons, Ltd., Burnside Wharf, Burnside Street, Bow, E.3.
Phone ADVance 3467 and 4949. [8968

BUSINESS & PROPERTY

BUILDERS' business and stock, including two lorries. Good offices and workshop. On Great North Road near Finchley.—Full details from J. Maunder Taylor, F.R.I.C.S., F.A.I., 1318, High Road, N.20. Hillside 2377. [8970

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Which would you rather have—structural steelwork which will involve you in high maintenance costs, or steelwork which will remain almost permanently rustproof at a slightly higher initial cost. If you are looking ahead, no hesitation is possible.

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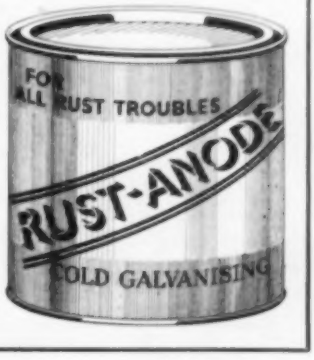

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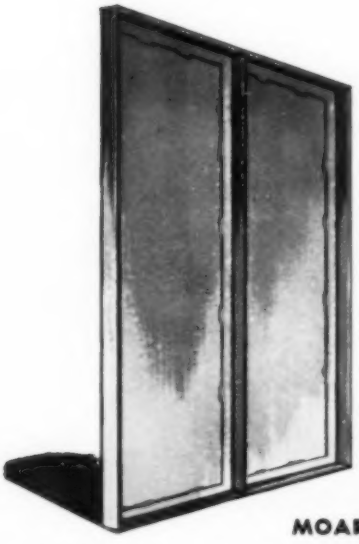

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